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DAUGHTERS OF DEPRESSED MOTHERS: AN EXAMINATION OF SELF-EFFICACY AND STRESS REACTIVITY

by

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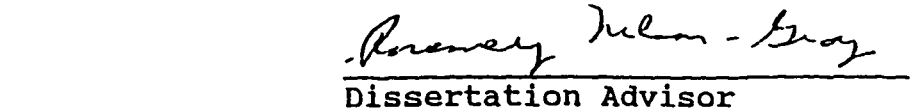
A Dissertation submitted to
the Faculty of The Graduate School at
The University of North Carolina at Greensboro
in Partial Fulfillment
of the Requirements for the Degree
Doctor of Philosophy

Greensboro
1996

Approved by



Dissertation Advisor

HOMAN, MARGOT A., Ph.D. Daughters of Depressed Mothers: An Examination of Self-Efficacy and Stress Reactivity. (1996) Directed by Dr. Rosemery Nelson-Gray. 253pp.

The current study investigated whether daughters of depressed mothers differ from daughters of nondepressed mothers in reporting more negative affect in a stressful situation, and in their confidence to successfully overcome a stressor. In addition to a normal control group, a group of college females with mothers with a chronic medical illness (both with and without accompanying symptoms of depression) were also included. Differences among the groups in perceptions of maternal parenting behavior, parental marital turmoil, and self-perceptions were also examined as potentially important contributors to levels of self-efficacy and stress "reactivity."

Results suggest that the critical factor which puts one "at-risk" for lower self-efficacy in the current study's social paradigm and for higher levels of depression and anxiety after receiving neutral/negative interpersonal feedback is living with a chronically debilitated mother (including daughters of depressed mothers, daughters of medically ill mothers, and daughters of medically ill mothers who also experience symptoms of depression) and not specifically living with a depressed

mother. Nevertheless, daughters of depressed mothers perceive more interpersonal conflict in their parents' marriage, have less satisfying relationships with their mother, and generally have lower self-perceptions than the other at-risk groups. Finally, only maternal acceptance and global self-worth appear to have any significant influence on the relationship between diagnostic status and self-efficacy. None of the parenting, marital turmoil, or global self-worth variables significantly influenced the relationship between diagnostic status and levels of depression and anxiety. These results suggest that reducing negative affect (especially anxiety) during stressful situations, and thereby increasing self-efficacy may be potentially important in preventing depression for these at-risk populations; however, future research will need to explore the relationship of reduced self-efficacy to subsequent levels of depression (particularly clinical depression) for these groups. The latter is particularly important because the current study found all three at-risk groups to be more vulnerable to a stressor than the control group, and previous literature suggests that daughters of depressed mothers are more likely to experience episodes of diagnosable depression than other at-risk groups (Downey and Coyne, 1990).

APPROVAL PAGE

This dissertation has been approved by the following committee of the Faculty of The Graduate School at The University of North Carolina at Greensboro.

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Committee Members

8-6-96
Date of Acceptance by Committee

11-27-95
Date of Final Oral Examination

ACKNOWLEDGMENTS

I am most grateful to my dissertation chairperson, Dr. Rosemery Nelson-Gray for her consistent support and tireless efforts in helping me complete this research. I would also like to take my committee members, Drs. Scott Lawrence, Robert Guttentag, Anthony DeCasper, and Kay Pasley, for their contributions. I wish to express my deep appreciation to my husband, my parents, my sister, and my brothers for their encouragement and belief in me.

For my Mother, Grandmother, and Shelley.

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CHAPTER I

INTRODUCTION

Overview of Study

Children of depressed mothers have been found to be at an increased risk for many types of psychopathology such as adjustment disorder(s), behavioral problems, and particularly depression. This association has been found in offspring studies and in studies of children in treatment for affective and other types of disorders (Beardslee, Bemporad, Keller, & Klerman, 1983; Downey & Coyne, 1990; Gelfand & Teti, 1990; Hammen, Burge, & Adrian, 1991).

However, the mechanism(s) that increases the risk to children of depressed mothers is unknown. One suggested explanation is that having a depressed mother leads to a negative self-concept and impoverished self-efficacy in their children (Hammen & Goodman-Brown, 1990; Jaenicke, Hammen, Zupan, Hiroto, Gordon, Adrian, & Burge, 1987). Self-concept has traditionally been defined by William James (1892) as "the self as known [to the individual]." Hammen and her colleagues (1987, 1988, 1990) appear to conceptualize self-efficacy as one facet

or aspect of the "self," i.e., as one dimension of the self-concept.

Jaenicke et al. (1987) suggests that the child's negative self-concept reduces his or her sense of personal worth, diminishes his or her sense of efficacy in accomplishing valued goals, and leads to an interpretation of "negative life stressors" as a "depletion of the self" and thus not able to be readily overcome (p.560). Likewise, Hammen (1988) suggests that negative self-concepts lead to impairment in children's functioning through the development of maladaptive ways of expressing or countering the discomfort, and by affecting their sense of efficacy, and hence persistence, in learning adaptive behavior and coping with stressors. Although Hammen (1988, 1990) suggests that the self-efficacy beliefs of children of depressed mothers are adversely affected as a result of their experiences, this suggestion has not been empirically tested. Furthermore, Hammen and Goodman-Brown (1990) propose that stressful events are "associated with depressive reactions to the extent that individuals construe them to represent an admonishment of the self--a loss, failure, depletion, evidence of undesirability or inefficacy."

Jaenicke et al. (1987) also suggest a pathway through which children of depressed mothers may develop a negative self-concept. They suggest that the stressful

conditions in the family that often accompany a mother's depression become "demoralizing burdens that may overwhelm the child's coping capabilities" (p. 560). As a result of these experiences, children of depressed mothers may become more likely than other children with nondepressed mothers to experience increased levels of anxiety and/or depression in response to a stressor, and feel less able to "cope with" or overcome the stressor.

Familial stressors such as marital turmoil, economic difficulties, and other negative life events have been implicated in contributing to children's functioning both directly and indirectly through parenting practices (Kaslow, Deering, & Racusin, 1994). Hamilton, Jones, and Hammen (1993) found that chronic stress, few positive life events, and single parenting predicted maternal affective style. More importantly, they found that dysfunctional interactions in the family were determined not only by maternal psychopathology, but by the quality of the family environment.

Hammen (1991) has also found that unipolar-depressed women have elevated exposures to stressful events in comparison to bipolar, medically ill, and normal groups. This included more exposure to both "independent" events (i.e., not dependent on one's behavior such as a devestating fire destroying one's home) and "dependent" events (i.e., dependent on one's behavior such as

interpersonal conflict). Hammen and Adrian (1993) found the same to be true for offspring of depressed women. They found that both unipolar women and their children contribute to the occurence of stressors in their lives and that these events tend to be of an interpersonal nature.

If children of depressed mother's are exposed to a greater number of stressful experiences, and contribute themselves to the occurence of stressors in their lives, it becomes potentially important to examine if they also exhibit higher levels of anxiety and/or depressive symptoms under stressful conditions; and/or, have less confidence in their ability to successfully overcome the stressor. These characteristics may further predispose children of depressed mothers to experience periods of depression. Hammen has also suggested that "further studies of stress exposure and coping in children are highly desireable."

Definition, Prevalence, and Sex Differences in Depression

Depression is a heterogenous disorder that is highly variable in course, but is usually a recurrent, episodic disorder with varying degrees of residual difficulties (Akiskal, 1982; Clayton, 1983). Persons who become clinically depressed can expect 5-6 episodes in

their lifetime (Zis & Goodwin, 1979; cited in Downey & Coyne, 1990). Although most episodes resolve in 6-9 months, 20% continue for at least two years. Symptoms of depression can include loss of motivation, anhedonia, somatic complaints, sadness, low self-esteem, and difficulty in concentrating (American Psychiatric Association, 1987). Anxiety is also often a component of depression. In fact, studies examining comorbidity rates among anxiety and mood disorders report average correlations of .61 between measures of depression and measures of anxiety (Dobson, 1985).

A large body of evidence indicates that women are more likely to show unipolar depression than are men. This finding is consistent across a wide variety of countries (Nolen-Hoeksema, 1987; Weissman & Klerman, 1977). The mean female to male ratio for (diagnosed) unipolar depression is 2:1 (including both major depressive disorder = 2:1 and dysthymia = 1.9:1) (Williams & Spitzer, 1983). Because women are considered to be at greater risk for depressive disorders, it becomes particularly important for research to identify factors which may place women at-risk.

Mothers with Young Children at Increased Risk

In addition to gender, there have been some additional risk factors identified that appear to be

characteristic of women who become depressed. One of these is raising young children (Brown & Harris, 1978). At any given time, approximately 8% of mothers are clinically depressed (Weissman, Leaf, & Bruce, 1987; cited in Downey & Coyne, 1990). The rate increases to 12% in mothers who have recently given birth (O'Hara, 1986). As a consequence, large numbers of children are exposed to maternal depression. Understanding the impact of maternal depression on children is, therefore, of great social as well as theoretical significance (Downey & Coyne, 1990).

Children of Depressed Mothers At-Risk for Psychopathology - Particularly Depression

Forehand, McCombs, and Brody (1987) reviewed the relationship between parental depressive mood states and child functioning and found that in 55% of the measures examined across 34 studies, there was a negative relationship between parental depressive state and child functioning. Beardslee et al. (1983) reviewed early risk research on children of schizophrenic parents. In this research, children of depressed mothers served as controls. They concluded that children of depressed parents were at considerable risk for a full range of psychological difficulties, particularly depression. However, they also cited several limitations of

the research conducted thus far (such as lack of control groups) and called for better controlled research.

More recent studies have included control groups and have confirmed the earlier findings that children of depressed parents are at risk for a wide range of problems in psychological functioning (Downey & Coyne, 1990). School-aged children of depressed parents generally show higher levels of both externalizing and internalizing symptoms than normal control children (Billing & Moos, 1983; Breslau, Davis, & Prabucki, 1988; Lee & Gotlib, 1989). Children of depressed parents have also been found to seek treatment more frequently for psychiatric symptoms (Klein, Depue, & Slater, 1985; Weissman, 1988), and have higher levels of functional impairment (Beardslee et al., 1987). A higher proportion of children of depressed mothers score in the clinical range of symptom checklists than normal control children (Lee & Gotlib, 1989). Among children of depressed parents, deficits have also been found in both social and academic competence that do not appear to be due to intellectual limitations. Furthermore, poorer physical health have been found in children of depressed mothers when compared to controls (Billings & Moos, 1983; Hammen, Gordon, Burge, Adrian, Jaenicke, and Hiroto, 1987). Other studies have found higher rates of conduct disorder, attention deficit disorder, and substance abuse in children of depressed

mothers. They are also more likely to receive multiple diagnoses than control children (Beardslee et al., 1987; Hammen et al., 1987; Orschavel, Welsh-Allis, & Weijai, 1988).

Also important is that Downey and Coyne cite nine studies that confirm that children of depressed parents are indeed at heightened risk for affective diagnoses. In a study by Klein, Depue, and Slater (1985), using 15-23 year old adolescents and young adults, the rate of any affective disorder was three times higher in children of unipolar-disordered parents and 1.75 times higher in children of bipolar-disordered parents than in control children. The lower rate among bipolar offspring may be related to the later onset of bipolar disorder (mania was generally absent from both groups) (Klein et al., 1985).

The Stony Brook high-risk study is another well-done research study whose results are widely reported throughout the literature. This study suggested that children of affectively disturbed parents showed high rates of affective disorders, whereas children of schizophrenic parents showed high rates of borderline and personality disorders (Weintraub, 1987). These findings suggest that "depression breeds true", and that children of depressed parents are likely to be particularly vulnerable to depressive disorders.

Methodological Issues

Specificity of Impairment

It is important to note that children of depressed mothers may be similar to other children who experience the stress and disruption that accompanies a serious parental psychiatric or medical illness. In fact, the evidence at this time does support the tentative conclusion that children of depressed mothers share a predisposition for more general adjustment problems with children of mothers with a physical illness, children who have mothers with a psychiatric condition other than depression, and mothers who are otherwise under stress. However, an increase in diagnosable depression has been found to be specific to children of depressed parents. Therefore, it is important for research to continue to address this "specificity issue" by including children who have endured other disruptive childhoods and examining how they are similar and different from children of depressed parents (Beardslee, Bemporad, Keller, & Klerman, 1983).

Depressive Symptoms Among Control Mothers

Also needed is the consideration of depressive symptoms in mothers included in comparison groups. Some investigators have tended to ignore this problem, while others exclude mothers with depression from comparison groups. This exclusion has the effect of producing

unrepresentative samples of control mothers with lowered and truncated distributions of depression scores. Therefore, it is important for researchers to account for depressive symptoms within control mothers without excluding them from the study (Lee & Gotlib, 1989).

Inclusion of Fathers, Mothers, or Both in Research and Possible Gender Differences in the Offspring of Depressives

Reviewers of research within this area often use the terms children of depressed parents and children of depressed mothers "loosely". In other words, the reviewers do not specify whether the studies cited included children of depressed mothers, fathers, or both. In most cases, the issue of whether the mother and/or father is included and the potential differential impact on the child depending on which parent is depressed (or in many cases if both are depressed) is given scant attention (Beardslee, Bemporad, Keller, & Klerman, 1983; Downey & Coyne, 1990). Generally, most studies include only depressed mothers, others include depressed mothers and fathers, and a few only depressed fathers.

Some studies have found children of depressed fathers to be less disturbed than children of depressed mothers (Keller et al., 1986; Klein et al., 1985). However, other studies have found equal disturbance levels

(Billings & Moos, 1983; Klein et al., 1988; Weissman et al., 1987). Families which include a depressed father are of unique interest because examination of these families may clarify the processes underlying the high levels of disturbance in children of depressed mothers. The research cited throughout this dissertation includes studies that include depressed mothers only, depressed fathers only, and studies that include depressed mothers and fathers. Caution must be used when making inferences between studies because of this fact. The current study included only depressed mothers.

The greater prevalence of depressed mothers than depressed fathers (since women with small children have much higher prevalence rates for depression) makes examining the effects of depressed mothers on their children critical. In addition, practical issues such as the difficulties in obtaining a large sample of children of depressed fathers also led to the decision of including depressed mothers only in the current research.

It will be important for future research to include depressed fathers in studies examining the effects of living with a depressed caretaker. Furthermore, it will also be critical for reviewers and authors to specify more clearly the numbers of depressed mothers and/or fathers included in their samples. Likewise, the term "children of depressed parents" needs to be used only when depressed

mothers and depressed fathers are both included in the study.

Furthermore, the literature also reports studies that include both sons and daughters without clarifying whether possible gender differences were investigated. These studies are cited here, and again caution must be exercised in generalizing from studies which do not differentiate between sons and daughters to the current investigation. The present research focused on daughters of depressed mothers only.

Heterogeneity of Depression

Research on children of depressed mothers has also suffered from a tendency to ignore the heterogeneity of depression, including the major distinction between unipolar and bipolar affective disorders. Fewer studies have compared the adjustment of children of unipolar versus bipolar parents and most of these have been very recent (Adrian & Hammen, 1993; Anderson & Hammen, 1993; Conners, Himmelhock, Goyette, Ulrich, & Neil, 1979; Hamilton, Jones, & Hammen, 1993; Hammen, et al., 1987).

On the one hand, Fisher, Schwartzman, Hardee and Kokes (1984) suggest that children of unipolar-disordered parents are less socially and academically competent than children of bipolar-disordered parents. Anderson and Hammen (1993) also found children of unipolar mothers had

significantly poorer functioning on a child behavior checklist of behavior problems, social competence, internalizing and externalizing behaviors, academic performance, and school behavior; and a greater proportion of children with unipolar mothers had chronic, clinically singificant problems in psychosocial functioning. Downey and Coyne (1990) propose that one possible explanation for the above finding is that the course of illness may be more chronic (thus more detrimental) for a higher proportion of unipolar-disordered parents than bipolar-disordered parents. Anderson and Hammen (1993) discuss their results in terms of the increased number of episodes the unipolar mothers experienced, and therefore the increased impact of the environmental stressors (that often accompany depression) children of unipolar parents face in addition to the depression. They also emphasize how the children of depressed mother's own deficits may interfere with the development of important competencies.

On the other hand, other studies (Hammen, Burge, Burney & Adrian, 1990) have suggested children of bipolar-disordered parents may be at greater risk for anxiety disorders. It has been suggested that the unpredictable atmosphere of living with a bipolar parent may contribute to this trend.

The current study focused specifically on children of unipolar-disordered mothers because it was determined

that it was too difficult or impossible to obtain a large enough sample of children of bipolar-disordered parents within the population of potential participants available for study.

Future research will need to determine the similarities and non-similarities among children of unipolar and bipolar-disordered parents.

Lack of Research on Late-Adolescence and Adults, and the Question of Longitudinal Consistency Between Childhood and Adulthood

Also important is that most studies on depressed parents have examined depressive symptoms in their children; thus, it remains unclear whether the symptoms observed in children are precursors of adult depression or a short-term stress reaction with limited developmental implications (Downey & Coyne, 1990). Longitudinal studies that follow children into adulthood are both difficult and expensive, so this is not often a practical solution for determining long-term outcomes of children of depressed mothers. Further, older adolescent-children of depressed mothers have been studied less often than younger children of depressed parents and studies on middle-aged and older adults are virtually nonexistent. One exception are studies that primarily documented psychiatric symptoms among children of depressed parents. These studies

included children as young as one year and as old as twenty-three years, but most did not yield further information beyond establishing rates of symptoms and diagnoses. As a consequence, less is known about older adolescents and adults with affectively disordered parents than about younger samples in similar family circumstances (Gelfand & Teti, 1990).

Beardslee (1986) asserts that "the epochs of infancy and adolescence are particularly difficult periods, and are particularly vulnerable to disruption. During adolescence the young person faces the challenges of entering adulthood including sexual maturity, vocational decisions, and achieving independence from one's parents". These experiences create stress and may prove overwhelming for young adults who may have been psychologically neglected and devalued by their parents.

One study conducted with adolescents suggests that affective disturbance is likely among adolescent females who were raised by depressed mothers (Hops, Bigalan, Sherman, Arthur, Friedman, and O'Steen, 1987). This study found that adolescent and preadolescent daughters of depressed women showed markedly dysphoric affect, whereas the daughters of nondepressed women were more likely to express happiness. These authors suggest that the appearance of notably dysphoric mood in the daughters of

depressed women may precede the development of more serious affective disturbance in the future.

Previous researchers have begun to address the question of whether the effects of being raised by a depressed parent are long-term; however, they have not looked very far across time. On the one hand, Billing and Moos (1985) and Richters and Pellogrini (1989) have found that child adjustment does not fluctuate as parents experience episodes and remission. On the other hand, other researchers emphasize that stressors in children's lives do precipitate depressive symptomatology, although maternal symptomatology is only one type of stressor for children (Compas, 1987; Siegal & Brown, 1988). Nonetheless, Lee and Gotlib (1991) have found that children's symptoms tend to continue even up to ten months after their mother's symptoms have abated. These results suggest that the most critical element of the experience of children of depressed parents may be the chronicity of the parent's impairment and familial stress.

Hammen, Burge, Burney, and Adrian (1991) followed 8-16 year old children of unipolar, bipolar, medically ill, and normal mothers for three years. Half (11 out of 22) of the children of unipolar mothers had some form of affective disorder at some point in the study. Five were recurrent with their first episode occurring before the study. These authors suggest that three overlapping, but

independent factors can contribute to children's outcomes: first, severity of the mother's disorder; second, the degree that the children live with chronic stressful conditions; and third, current depressed mood and chronic stress contribute more to negative outcomes than maternal psychiatric disturbance itself.

Because it is vital to determine whether growing up with a mother who is chronically depressed has deleterious long-term effects (regardless of whether the parent continues to be symptomatic when the child becomes a young adult), it is critically important for research to be done on adolescents and young adults who grew up with mothers suffering from chronic depressive disorders. This is particularly important for adolescent females since they are at increased risk for depressive disorders.

Need for Studies that Include Less Serious Maternal Depressive Disorders

An additional consideration concerns the exceptionally high rates of past episodes and hospitalizations among the depressed mothers in studies reviewed by Downey and Coyne (1990). Because much of the previous research includes only very seriously disturbed mothers, research was needed on the adjustment of children with clinically depressed parents whose disturbance is less severe. Research setting will impact the severity of

the disorder, with mothers identified from clinic and hospital settings differing substantially from individuals who have never sought treatment. It is important not to generalize uncritically from a treatment-research setting to other research settings where less seriously disturbed mothers are likely (Downey & Coyne, 1990).

Possible Explanations for the Link Between Parental Depression and Child Adjustment/Disturbance

Genetic Explanations

Twin and adoption studies have suggested that genetic factors can only partially account for the problems of children with depressed parents, and direct tests of genetic transmission cannot be conducted because trait markers of genetic liability have not yet been determined (Allen, 1976; Cadore, O'Gorman, Heywood, & Troughton, 1985).

As a consequence, continuing to pursue possible biological mechanisms is desirable, but it is also critical that possible psychosocial mechanisms that contribute to the relationship continue to be investigated (Hammen, 1988).

Parent-Child and Familial Relationships

Much work has been conducted examining the relationship among family members when an affectively ill

parent is present. Hammen, Burge, and Adrian (1991) have found that maternal depressive symptoms are a type of stressor for a child (which leads to depression); however, the influence of maternal symptoms on children's symptoms was not unidirectional. Maternal episodes of depression sometimes followed the child's symptoms, and child's symptoms sometimes followed maternal symptoms (as expected). In addition, both diagnoses were associated with stressful events experienced by both mother and child. Also important to note is that many of the children's disorders involved chronic symptoms that did not remit when maternal symptoms remitted. Findings suggested that mothers and children might be reactive not only to the same outside events but also to each other's reactions/symptoms.

Maternal depressive symptoms also impact the quality of the interactions among family members. Depressed mothers are likely to be withdrawn, unresponsive, irritable, and impatient. These symptoms are likely to affect the mother's ability to offer support, concern, and attention to her children. Observational studies of depressed women confirm the association between their mood and dysfunctional parenting (Downey & Coyne, 1990). If the child is also experiencing a stressful circumstance (in addition to their mother's depressive affect), he or she is especially likely to need

support from their mother to buffer the effects of the negative experience. Hammen et al.'s (1991) research supported that maternal episodes of depression contributed significantly to increases in depression in their children. Furthermore, children were more depressed when they experienced the combination of stressful events and maternal disorders. Those who had high levels of stressors but whose mothers were not symptomatic did not become depressed, supporting the stress-buffering theory of support. Hammen et al. (1991) suggest that mother and child may be caught in a vicious cycle of stressful circumstances and symptomatology interfering with successful coping.

Parenting Behavior and the Possible Link to Their Children's Vulnerability

Behaviors that depressed mothers demonstrate with their children are consistent with the behavior that they show with other adults. For example, depressed mothers have been found to emit lower rates of behavior and show constricted affect with both adults and children. They adopt less-effortful control strategies and show considerable hostility and negativity with their children (Gelfand and Teti, 1990). In addition, Cohler, Grunebaum, Weiss, Hartman, and Gallant (1977) found that these mothers often confused their own needs with their

children's needs. Cohn and Tronick (1987) suggest that the sustained effortful behavior that parenting involves is likely to be difficult for a depressed mother, especially when her child is young and there is a need for an exaggerated affective tone and a high tolerance for aversive behavior. Typical mothers work toward maintaining positive interactions and emit a high level of positive emotion, but this is likely to be difficult for mothers who have depressive symptoms. Hamilton, Jones, and Hammen (1993) found that unipolar mothers are more likely to exhibit a negative affective style than physically ill and normal women. Research also suggests that the depressed mother may be unavailable/unresponsive to the child's needs and may be critical and rejecting. Furthermore, the tendency for these mothers to become coercive (rather than negotiate terms with their children) may lead to their children responding to interpersonal conflict through either coercion or withdrawal (Kuczynski, 1984). Hammen (1992) suggests a model of depression that links the quality of the mother-child relationship to the offsprings' social functioning, and then to depression as a result of stressors that are in part a consequence of the childs deficient social skills and dysfunctional self- and social cognitions.

Ge, Conger, Lorenz and Simons (1994) found support for a mediational model in which stressful life events

experienced by parents are first related to parents' depressed mood and disrupt skillful parenting practices. The disrupted parenting practices in turn put adolescents at risk for developing depressive symptoms.

It is not yet possible to draw a conclusion that these maternal behaviors are responsible for their children's tendency to become depressed. Unfortunately, it is difficult to relate maternal parenting behavior to their offspring's depressive disorders because much of the research examining the incidence of disturbance among children of depressed mothers have used older children (ages of children included ranged between six years and twenty-three years), and more seriously disturbed samples of mothers than has research exploring depressed mothers' parenting behavior (ages of children included in most of these studies ranged between two months and four years). Further, research on parenting by depressed mothers has generally used self-report measures to diagnose maternal depression rather than structured diagnostic interviews. Self-report of symptoms may lead to the inclusion of mothers in the studies who do not fit the diagnostic criteria for clinical depression. This is in contrast to other studies within the literature which tended to include depressed mothers from treatment settings who were severely depressed. These factors make reaching sound

conclusions about the relationship of maternal behavior and risk among children difficult (Downey & Coyne, 1990).

Marital Turmoil Common Component of Maternal Depression

The hypothesis currently receiving the most attention is that the link between child and parental psychopathology is a direct result of living with that parent (especially a mother). However, research has also been conducted that suggests that the relationship is spurious, i.e., that both the maternal and child depressions are caused by preexisting conditions such as marital turmoil or family stress (Downey & Coyne, 1990).

Depressed women have been found to experience a high rate of marital conflict (Weissman & Paykel, 1974) which often persists as long as four years after they experience a depressive episode and the depression remits. Divorce is also common among women who experience episodes of depression (Downey & Coyne, 1990). Furthermore, depressed persons tend to marry persons with a psychiatric illness or a family history of psychopathology (Merikangas & Spiker, 1982). When depressed persons have psychiatrically disturbed spouses, their own symptoms tend to be more severe, and marital and family disturbance is more likely (Merikangas, Weissman, Prusoff, & John, 1988). This interpersonal context provides a possible alternative

explanation for the difficulties that depressed mothers and their children experience (Brown & Harris, 1978).

Marital conflict may explain the general adjustment problems of children with a depressed mother; however, it is not known whether it explains their high rate of clinical depression. The results of studies are mixed. The literature examining marital conflict in divorced and intact familes (research that often does not include maternal depression as a variable) relies heavily on studies focusing on externalizing behaviors as indices of adjustment (Downey and Coyne, 1990; Grych and Fincham, 1990). However, when internalizing behaviors were included, some studies within this literature have found marital conflict was related to internalizing problems (Johnson, Gonzalez, and Campbell, 1987; Jacobson, 1978). Other studies, such as the one conducted by Fauber, Forehand, Thomas, and Wierson (1990) have not found this to be true. These authors conducted research that suggests that most of the relationship between marital conflict and adolescent adjustment problems (they did not examine maternal depression in the study) could be explained through perturbations in the parent-child relationship. This was especially true for intact families. In addition, they found marital conflict had a <u>direct</u> effect only on adolescent externalizing problems.

On the other hand, Tannenbaum, Neighbors, & Forehand (1992) included depressed mood, physical problems (personal variables), marital status and interpersonal conflict (interpersonal variables) as stressors that predict adolescent functioning. They found interparental conflict or marital status was related to every area of functioning (internalizing and externalizing problems, and grades) for boys and to internalizing problems and grades for girls. Maternal depression was a significant predictor only for internalizing problems of girls. They concluded that interpersonal variables appear to be more important for the functioning of young adolescents than are personal variables.

Finally, two other studies (Fendrich, Werner, & Weissman, 1990; Hops et al., 1987) provide evidence that the processes underlying depression in children may differ from those underlying the externalizing problems that contribute to general adjustment scores. These studies found that whereas family discord was most strongly linked with conduct disorders, parental depression was most strongly linked with child depression. Therefore, marital discord may account for externalizing problems, but might not account for clinical depression. However, parental depression and marital discord have a high co-morbidity and may each increase the likelihood of the other's occurrence (Downey & Coyne, 1990).

Social -Learning Explanations

Bandura (1977) expouses modeling and both self-imposed and externally controlled response consequences as important influences on social development. In the case of inter-generational transmission of depression vulnerability, this theory would stress the types of modeling experiences a child of a depressed mother would have in their environment. Gelfand and Teti (1990) suggest the following: "Young children note and emulate not only a model's overt motor actions, but also emotional displays including subtle facial expressions and verbal intonations that are central to the expression of emotions such as depression" (p. 340). Children of depressed parents might "learn how to be depressed" by imitating their parents' unresponsiveness, flat emotional expression, pessimistic statements, slowed pace, and other depressive symptoms.

Nonmediational Explanations

A radical behaviorist such as Ferster (1973) would likely suggest that children of depressed mothers are predisposed to depression because the environment in which they grew up (i.e., their reinforcement history) led to impoverished behavior repertoires. For example, their mother may not have taught many behaviors that mothers typically teach because of being preoccupied with her own

symptomatology. She may have created an environment such that large amounts of behavior had to be emitted by the child to alter it. In contrast, rich reinforcement schedules are conducive to new learning. In addition, children of depressed parents may receive less reinforcement away from home because maladaptive behaviors can become prepotent and replace more adaptive behavior. A depressed parent could inadvertently reinforce maladaptive behavior or could simply fail to reinforce adaptive behavior. For example, the child of a depressed mother could be reinforced for engaging in many escape or avoidant behaviors that later prevent positive reinforcement from being obtained in non-home environments. A depressed mother may feel too tired to enforce a rule such as cleaning up their room before playing outside and allow the child to run outside instead of cleaning his/her room. When the child returns from outside, she may let the issue pass because she "doesn't feel like dealing with it". This would reinforce avoidant behavior and increase the likelihood of the child engaging in more avoidant behavior in the future (which is not likely to be reinforced in other environments). Other examples of how children can fail to establish a normal behavioral repertoire is through the erratic presentation of reinforcers, inappropriately timed reinforcement, large and sudden environmental changes (such as the father

leaving home because of marital conflict), and generalized and suppressed anger that leads to a loss of social reinforcement. For instance, children of depressed mothers may begin to behave in an angry manner in both their home and non-home environments. This may then lead to a cycle of anger between themselves and others with whom they are interacting, and lead to their receiving even less reinforcement from the environment. Also important is that children of depressed mothers may be likely to live in an environment that has high amounts of aversive stimuli (especially conditioned aversive stimuli), also leading to feelings of depression.

These reinforcement histories could lead to feelings of hopelessness and/or feelings of inefficacy in children of depressed mothers in changing their environment. However, from a radical behaviorist viewpoint, these thoughts and feelings would simply be behaviors that could be clues to a person's reinforcement history. In other words, the thoughts and feelings are not causes, but may be a sign that a person has a certain reinforcement history.

Protective Factors and Risk Markers

Although children of depressed mothers are at-risk for developing a depressive disorder, not all children who have depressed mothers become depressed themselves. Since

there is not a one-to-one relationship between living with a depressed mother and becoming depressed oneself, it becomes important to investigate factors that appear to protect resilient children (e.g., those who do not develop a psychiatric disorder), and risk factors that appear to contribute to the development of depression in children of depressed mothers.

Literature on Risk Markers and Protective Factors

Research on children of depressed mothers has only recently begun to investigate what child characteristics modify and/or decrease risk for maladjustment. Nonetheless, Radke, Yarrow, Cummings, Kuczynski, and Chapman (1985) have found that children with unipolar and bipolar-disordered parents are more likely to have insecure attachment relationships with their mother. However, Gelfand and Teti (1990) suggest that good supportive relationships with other adults may protect children from the negative effects of having an insecure attachment relationship with their mother.

A study by Zahn Waxler et al. (1984) using six year olds showed that children of depressed mothers had problems with empathy and displayed unusual reactions to conflict. These same authors suggest that "emotional disregulation, accompanied by poor social relationships evidenced as an impoverished ability to give to others,

illustrates one process through which depression may develop."

Beardslee, Schultz and Selman (1987) studied adolescent offspring of parents with affective disorders. They found negative relationships between the duration of their parents affective illness (and with marital discord and SES), and their interpersonal negotiation strategy (INS). INS levels predicted adolescents' social functioning even after controlling for age, sex, intelligence, number of adolescent diagnoses, and parental-risk factors. The overall findings suggested a risk model in which parental disorder is mediated by social-cognitive capacity to predict adaptive child behavior.

An additional study by Zahn et al. (1990) reported that children of mothers with affective disturbance "responded to projective tests with exaggerated and complex representations of interpersonal conflict and distress." Finally, Klein et al. (1985) report that "subdromal problems in affect regulation (e.g., cyclothymia and dysthymia) found in the offspring of unipolar and bipolar parents index risk for later affective disturbance."

Conrad and Hammen (1993) have found that positive self-concept, academic success, social competence, and positive perceptions of mothers were factors associated

with lower diagnostic ratings for depression for children of unipolar, bipolar, medically-ill and normal mothers. Maternal social competence and having a healthy father in the home also lessened the risk for depression for offspring of unipolar mothers, but surprisingly, increased the risk for depression for offspring of bipolar mothers.

Other researchers have reported similar findings. Neighbors, Forehand, and McVicar (1993) found that high self-esteem and a positive relationship with their mother differentiated resilient and non-resilient adolescents, and Downey and Coyne (1990) suggest that children with high social skills and intelligence are at reduced risk for disturbance. Finally, Wierson and Forehand (1992) also found that with early adolescents, perception of the mother-adolescent relationship was a significant mediator variable between interparental conflict and cognitive competence.

More on Negative Self-Concept as a Risk Marker

Hammen (1988) investigated children's cognitions about themselves, the stressful life events they experienced, and the interaction of self-cognitions and life events as predictors of depression. They included children of normal, medically ill, and bipolar and unipolar depressed mothers. They found that Piers-Harris self-concept scores and interview-assessed children's

stressful life events significantly predicted changes in depression status over six months. In other words, negative self-concept and high levels of stressful events led to diagnoses of depression. High levels of stressors and the interaction of high stressors and low self-concept also predicted changes in diagnosis of nonaffective disorders (conduct disorders, substance abuse).

The authors suggest that these results are consistent with a model of depression vulnerability that emphasizes cognition about self-worth and self-efficacy as mediators of the impact of stressful events. Hammen suggests that more experimental work is needed to clarify the processes of how relatively negative self-concepts are related to changes in depression or how positive self-views are protective. Hammen does not make clear the conceptual relationships among the different terms she discusses such as "self-views" and "self-efficacy" and "self-concept".

More research conducted in this area by Jaenicke et al. (1987) has found that children of unipolar and bipolar depressed mothers had significantly more negative self-concepts, tended to attribute negative outcomes to themselves, and had less positive self-schemas on a task of memory for self-descriptive words compared with children of non-psychiatric mothers (medically ill) and "normals". Children of depressed mothers were also more

likely to have a psychiatric diagnosis and social and academic problems than the other groups. Negative self-cognitions were found to be related to maternal chronic stress, current maternal depressed mood, and both perceived and observed negativity of mother-child interactions. Negative perceptions (by the child) of the parent-child relationship was the strongest predictor of the child's lifetime depression, with maternal lifetime history of depression also making a significant contribution. Also found was that maternal self-criticism was not significantly related to child self-criticism, although maternal criticism of the child was significantly related to child's self-blame. This suggests that imitation of maternal self-criticism is probably not the method of transfer.

Self-Efficacy as a Potential Risk-Marker

Thus far, it has been established that children of depressed mothers are at an increased risk for general adjustment problems, and particularly depressive disorders. However, the potential mechanisms that transfer this risk from mother to child have only recently begun to be researched. The current study examined beliefs about one's "ability to cope" as a potential risk-marker. Beliefs about coping were defined and thereby measured, in part, by a measure of self-efficacy.

Hammen and her colleagues (1987,1988, 1990) appear to view self-efficacy as one dimension or aspect of all the cognitions one can have concerning the "self". Self-efficacy is then treated as being related to one's self-concept (the self as known). However, self-efficacy is defined by Bandura (1977) as involving two distinct processes, response-outcome expectancies and efficacy expectations. On the one hand, an outcome expectancy is defined as a person's estimate that if they execute a given behavior, it will lead to a certain outcome. Efficacy expectations, on the other hand, are the conviction that one can successfully execute the behavior required to produce the outcome. Bandura does not directly address the relationship between self-efficacy and self-concept, but uses the term self-efficacy to describe a cognitive mechanism (i.e., construct) that he proposes leads to psychological and behavioral changes. Self-efficacy is conceptualized by Bandura as affecting both the initiation and persistence of coping behavior. He suggests that the strength of people's convictions in their own effectiveness is likely to affect whether they will even try to cope in a given situation.

According to social learning theory, behavior is mediated through self-efficacy. Response-outcome expectancies and efficacy expectations are differentiated because a person can believe that a particular course of

action will result in certain outcomes, but question whether they can perform those actions. The strength of conviction in one's effectiveness determines whether coping behavior will even be attempted. A person typically fears and avoids situations that are threatening because they believe the situation's demands exceeds their coping abilities. Alternatively, they can be reassured after judging themselves capable of managing a situation that would otherwise be intimidating (Bandura, Adams, & Beyer, 1977).

Perceived self-efficacy then influences activities in which one participates; for example, it affects persistence of coping efforts, once an activity is initiated. According to Bandura, "efficacy expectations are likely to determine how much effort people will expend and how long they will persist in the face of obstacles and aversive experiences. " The stronger the efficacy expectations, the stronger and more persistent the effort put forth. As a result, those who persevere in experiences that are somewhat threatening will gain corrective experiences that will reinforce their sense of efficacy. Alternatively, if one ceases one's coping efforts prematurely, this will lead to their retaining their self-debilitating expectations and fears. Bandura asserts "efficacy expectations are a major determinant of people's choice of activities, how much effort they will

expend, and of how long they will sustain effort in dealing with stressful situations" (Bandura, 1977, p. 194).

Self-efficacy beliefs could be an important risk factor leading to depression because low feelings of efficacy may decrease the person's ability to obtain positive reinforcement from his/her environment, decrease the probability a person will reach valued goals, and lower one's expectations for overcoming challenges. A vicious cycle may begin where a person has lowered expectations for success, then expends less effort, thereby receiving less reinforcement from the environment which leads to increased depressive affect, thus even less effort is then put forth, creating a vicious cycle. The current study investigated the first aspect of this model, i.e., whether children of depressed mothers have lower self-efficacy than children of medically ill mothers and normal mothers.

Expectations of personal efficacy stem from four main sources of information: a) performance accomplishments (based on personal experiences of mastery), b) verbal persuasion (using persuasive suggestion that one CAN cope), c) emotional arousal (because high arousal tends to decrease performance, one is apt to consider oneself more able when not highly aversively aroused than when tense and agitated), and d)

vicarious experiences. "Seeing others cope with threats and eventually succeed can create expectations in others that they too should be able to achieve some improvements in performance if they intensify and persist in their efforts" (p. 197) (Bandura, 1977).

Vicarious experiences seem particularly relevant for children of depressed mothers. These mothers are likely to be poor models for effective coping; thus, their children may come to believe that they too have fewer resources for coping than do others around them. Depressed mothers may also be less likely to reinforce good coping skills in their children (therefore decreasing their strength/likelihood). Reduced confidence in coping effectively is likely to be further established if the children then are less persistent in their efforts, and therefore do not reach their goals.

Finally, Bandura emphasizes that people "rely partly on their state of physiological arousal in judging their anxiety and vulnerability to stress." Because high arousal debilitates performance, individuals are more likely to expect to be successful when they are not overcome by aversive arousal than if they are tense and agitated (Bandura, 1977). Likewise, Masters and Furman (1976) have demonstrated that children's expectancies for contingent control are adversely affected during negative affective states (i.e., thus negatively affecting their

expectancies that certain behaviors will lead to certain outcomes).

Statement of Purpose

The primary purpose of this study was to investigate whether daughters of depressed mothers differ from daughters of non-depressed mothers and daughters of medically-ill mothers in the following ways: 1) Do daughters of depressed mothers differ from the others in terms of reporting increased levels of anxiety and depressive feelings in response to a negative stressor? 2) When compared to the other two groups, do daughters of depressed mothers have lower self-efficacy scores? 3) Do daughters of depressed mothers differ from the other groups in terms of reporting increased levels of anxiety and depressive feelings after evaluating their expectations in improving their performance? (4) In comparison to the other groups, do daughters of depressed mothers have lower self-perception scores? 5) Do daughters of depressed mothers perceive that their parents experience greater marital turmoil/conflict than the other groups? 6) Do they have more negative perceptions of their mother's parenting practices in comparison to the other groups? 7) Are marital conflict, global self-worth, and/or perceptions of parenting behavior unique predictors of anxiety, depression, and self-efficacy, i.e., do they

provide unique information beyond what can be known by using diagnostic status as a predictor?

Based on previous research findings, it was expected that daughters of depressed mothers would significantly differ from daughters of non-depressed mothers and daughters of medically ill mothers in terms of reporting more anxiety and depressive feelings in their initial response to the stressor. These results would be consistent with literature that suggests that children of depressed mothers are particularly vulnerable to depression in comparison to other at-risk groups (Hammen, et al., 1987; Klein, Depue, & Slater, 1985; Klein et al., 1988; Weintraub, 1987). In addition, anxiety is expected to increase because of the high levels of comorbidity that have been found between anxiety and depression (Dobson, 1985; Maser & Cloninger, 1990).

It was also expected that children of depressed mothers would have lower self-efficacy scores than children of non-depressed mothers and children of medically-ill mothers; however, children of medically-ill mothers would likely have lower self-efficacy scores than children of non-depressed mothers. This would support research that suggests that other risk groups show evidence of poorer adjustment when compared to controls (Fendrich, Werner, & Weissman, 1990; Hops et al., 1987).

Daughters of depressed mothers were also expected to experience more depression and anxiety in comparison to the other two groups after assessing their ability to overcome this stressor (i.e., improve their performance). This result would be consistent with Hammen and her colleagues' (1987, 1988, 1990) suggestions that low self-efficacy leads to depressive symptoms.

It was also expected that daughters of depressed mothers would have lower self-perception scores than daughters of medically-ill mothers and daughters of non-depressed mothers. This would be consistent with research conducted by Hammen (1988) and Jaenicke et al. (1987). However, Downey and Coyne suggest that many children who live with chronic stress are likely to show difficulty on general adjustment measures; thus, daughters of medically ill mothers were also expected to have lower self-concept scores than daughters of non-depressed non-medically ill mothers.

Because the marital turmoil and parenting behavior measures were added after the original research proposal was written, apriori predictions were not made regarding the results of research questions 5,6, and 7.

CHAPTER II

METHOD

Participants

Participants were 71 undergraduate caucasion females who earned course credit for their participation. Participants were from the Psychology (n=63 or 87%) and the Human Development and Family Resources (n=9 or 13%) departments at the University of North Carolina at Greensboro. Only Caucasion females were included because of greater availability, to reduce sample heterogeneity, and because of the greater incidence of unipolar depression in females. Only women between the ages of 17 and 31 years old were included. 89% of the participants were within the ages of 18-21.

Three groups of participants were included initially with the following characteristics (to be elaborated subsequently): (1) Experimental Group One: (N= 26) - Young adults who reported their mothers were chronically depressed during childhood. The term daughters of depressed mothers will be used subsequently. (2) Experimental Group Two: (N=27) - Young adults who reported their mothers did not have a chronic medical illness or a depressive disorder either now or in the

past. The term daughters of non-depressed non-medically ill mothers (or control group) will be used subsequently. (3) Experimental Group Three: (N=18) - Young adults who reported their mothers had a long-term medical illness (for example, rheumatoid arthritis). This group was later divided (for reasons explained in detail in the results section) into participants who had mothers with a medical illness and some mild-moderate symptoms of depression (n=10), and participants whose mothers had a medical illness but did not appear to experience symptoms of depression (n=8). The terms daughters of medically ill only mothers and daughters of depressed/ medically ill mothers will be used subsequently.

Demographic Variables

Three one way analyses of variance were conducted to test for differences between the four groups for the following demographic variables: participants' age, and the number of times their mother and father were married (See Table 1. Table 1 and all subsequent tables are located in Appendix A.). The independent variable in these analyses was group status. The dependent variables were the demographic variables.

Analyses revealed differences between the groups in how many times the participants' mother was married, and the age of the participants. Results suggested that the

depressed mothers had been married more often on average than the other groups, and that the ill and depressed group and depressed group were slightly older than the ill only and the control group. See Table 2 for the means of each demographic variable by group.

In addition, three chi-square tests were conducted to test for differences between groups for the following demographic variables: (if their parents were divorced) how much the participants saw the parent with whom they did not live, the length of those visits, and their total SES status (this total included both education and income and was determined for the head of the household by the Hollingshead). Again, the independent variable in these analyses was group status, and the dependent variables were the demographic variables. The chi-square tests indicated that none of the groups significantly varied from the other on any of the demographic variables (Table 3).

Finally, to determine if the groups were roughly equivalent regarding how many of the participants lived with their mother (most of the time) while they were growing up, a percentage was calculated for each group. Results indicated that most of the participants in all four of the groups lived with their mother most of their lives (Depressed = (24/26) 92%, Ill only, 100%, Ill/Depressed= 100%, and Controls (26/27) 96%).

Characteristics of Participant Groups

Daughters of Depressed Mothers

DSM-III-R criteria. The original criteria for inclusion stated that participants in this group must indicate that their mother exhibited depressive symptoms that either met or exceeded the criteria of symptoms (five symptoms are required for a 2-week period) for the diagnosis of major depression outlined by the DSM III-R. 77% (20/26) of the mothers met at least the required number of five symptoms for major depression. Of the six who did not meet, four were unsure if their mothers met all criteria for complete 2-week periods. However, each of the four participants indicated that her mother had six or more symptoms and/or endorsed criteria for dysthymia. The other two participants identified only four symptoms of major depression in their mothers; however, one indicated that her mother was never without symptoms, and the other indicated her mother was symptomatic most of the time. See Appendix B for a copy of the diagnostic interview form used and a complete report on the information gathered to ascertain if the mothers met this criteria.

Dysthymia. Information was collected regarding symptoms of dysthymia in order to describe the depressive sample in as much detail as possible; however, a diagnosis

of dysthymia was not required for inclusion in the study. Because of the retrospective nature of information needed and the limitation of having the daughter as an informant, it was impossible to ascertain if mothers met one of the criteria for dysthymia. This criteria specified that there is no evidence of an unequivocal major depressive episode during the first two years of the disturbance. Overall, 69% of the sample indicated that their mothers appeared to be dysthymic at some point during their lifetime. This means the subject indicated that their mother was down more days than not for a period of at least two years, and they endorsed at least two symptoms needed for the diagnosis of the dysthymia. Moreover, it was not possible to rule out possible "double depressions" (a major depressive episode superimposed on dysthymia), or to rule out that a major depression had simply not remitted in its entirety (thus dysthymia was not present, but a partially remitted depression that remained for two years or longer).

Child's age at onset. The orignial inclusion criteria specified that maternal symptomatology must have begun prior to the child's age of seven. 77% of the CODM sample (20/26) indicated that their mother's difficulty with depression began prior to age seven. 65% of these (13/20) indicated that their mother had been depressed off and on since before their birth. Another 15% (4/26) of

the sample reported onset at age 8-9, and 8% of the sample reported onset at age 12-13 (2/26).

Chronicity. Inclusion criteria specified that participants must indicate that their mother was never without symptoms of depression for greater than four years and was depressed a significant amount of the time. 92% (24/26) of the sample had mothers who were never without symptoms for a period as long as four years. Two did not completely meet this criterion. The first completely met criteria from ages eight to thirteen, but since the daughter's age of thirteen did not appear to be symptomatic (thus did not demonstrate significant symptoms for five years). Another said that her mother had greater than 10 depressive periods, but she could not be certain if four or more years elapsed between any two periods. All participants indicated that her mother was depressed a significant amount of time (instead of rarely, or only on occassion).

Medication. Criteria specified that if medication was used, symptoms must still have been apparent to the child, although the mother did not need to take medication for the daughter to be included in the study. 46% (12/26) of the participants indicated that their mother had taken some type of "nerve pill" and/or anti-depressant. 42% (11/26) indicated that their mother did not take medication (to their knowledge). Finally, 12% (3/26)

indicated that they would probably not be told if their mothers had taken psychiatric medication, thus they were unsure.

Only mothers with unipolar depression were included. If participants indicated minimal amounts of hypomania, and it was clear that there was no functional impairment (which is needed to qualify for a manic episode), then endorsements of symptoms of hypomania were not used as exclusion criteria. However, several participants were excluded because it did appear their mother met criteria for bipolar disorder.

Symptoms of other psychiatric disorders. Inclusion criteria specified that the mother may not have been hospitalized for an additional psychiatric disorder. No attempt was made to exclude possible substance abusers (unless they had inpatient treatment for substance abuse), or persons with personality disorders. In addition, inclusion criteria specified that the adult-child must not view the depression as secondary to another psychiatric and/or medical problem, but must be perceived by the child as the primary problem. All participants met these criterion.

Hospitalizations. Inclusion criteria did not specify that mothers needed to have been hospitalized for depression. Nevertheless, 19% (5/26) of the depressed mothers had been hospitalized for depression. Two of the

five mothers had been hospitalized one time (for the first participant, 7 months at the daughter's age of 12; and for the second participant, immediately after the daughter's birth after a suicide attempt). Two more participants had mothers who have been hospitalized for depression twice. The first of these made two suicide attempts, and was hospitalized for several weeks at the participant's age of 13 and again at age 14. The other was hospitalized for depression (without a suicide attempt) when the daughter was 13 and again at age 19. One participant's mother was hospitalized three times because of depression. This was at the daughter's ages of 10, 13, 15 for several months at a time.

Current Depression. Inclusion criteria did not specify that the mother must have recent/current symptoms of depression. This information is included because the research literature suggests that current levels of maternal depression may place offspring at greater risk for symptomatology themselves than do previous episodes of depression. 73% (19/26) of the children of depressed mothers indicated that there mother was currently depressed, 8% (2/26) indicated they were unsure, and 19% (5/26) indicated that their mothers were not currently depressed.

Daughters of Medically-Ill Mothers

First, a summary of the medical illnesses that the mothers exhibited follow: 56% (10/18) of this sample were mothers with arthritis. Two of these had additional complications such as hip/knee replacements. 17% (3/18) of the medically ill mothers had back problems as a result of scoliosis or injuries. One mother each had retinitis pigmentosa, kidney disease, and lupus. Two mothers had severe migraine headaches. 28% (5/18) had more than one illness such as arthritis and asthma, or back problems and arthritis. 11% (2/18) had more than two medical problems (one had lupus, obstructive pulmonary disease, and degenerative joint disease; and another had back problems, kidney problems, and a heart-valve problem).

Depressive symptoms in daughters of medically ill mothers. Fifty-six percent (10/18) of the medically ill mothers also experienced depressive symptoms; however, none met criteria for both the depression and medical illness groups (as specified). To have been included in the medically-ill group, the adult-child must also view the chronic illness as the primary problem, and the depression as secondary. If a subject met criteria for both groups or the two problems were seen as equally important (e.g., regarding the "stress" they caused in the family and the impact on the child's life), or the chronic illness is perceived as being secondary in importance in

comparison to the depressive symptoms, then that participant was excluded from the study (n= 3). Of those 56% (10/18) who also experienced depressive symptoms, 60% (6/10) had mild symptoms only and 40% (4/10) had moderate symptoms (i.e., based on the number of symptoms endorsed, duration of symptoms, whether the person took medication for depression, and whether the depression appeared to be present only when the mother was experiencing symptoms of her medical illness). It is important to note that of the seven (of eighteen) mothers who had multiple illnesses, five of these seven also had mild/moderate depression. The other five medically ill women (with only one medical problem) whose daughters reported depressive symptoms had the following medical illnesses: kidney disease, arthritis (2 mothers), back problems, and migraine headaches.

Child's age of onset. Inclusion criteria specified that the mother's symptoms must have begun before the participant's age of seven. Twenty-two percent (4/18) of the daughters of medically ill mothers indicated that their mother's illness predated their birth. 33% (6/18) indicated an onset between the ages of 5-7. 22% (4/18) indicated an onset between the age of 8-9, and 22% (4/18) indicated an onset between the ages of 13-15.

Periods of excacerbation and then a return to mimimum of symptoms. This was also included among

inclusion criteria. Ninety-four percent (17/18) of the sample met this criteria. The only mother who did not fit this criterion exactly had retinitis pigmentosa. However, the daughter endorsed this criterion because the levels of stress/upset rose and fell during periods when her mother was losing sight or maintaining her sight. These periods of losing sight were quite stressful, but the stress would decrease as her mother adjusted to her current level of eyesight.

Chronicity. One-hundred percent (18/18) met this criteria. This meant that the mother never went without symptoms for more than four years and was not simply ill occassionally, or rarely, but was ill a significant amount of the time while the daughter was growing up.

Other psychiatric illness (excluding depression). Inclusion criteria were identical to inclusion criteria specified for children of depressed mothers. Eighty-nine percent (16/18) did not indicate any other psychiatric illness. However, one daughter indicated that her mother was alcoholic, although her mother quit drinking before she was born. In addition, she had never been formally treated/hospitalized for alcoholism. A second participant thought that her mother had 1-2 panic attacks during her lifetime.

Medication. It was not specified that mothers had to have taken medication to be included in the study.

Overall, 78% (14/18) of this group had taken medication for their illness. Seventeen percent (3/18) did not take more than aspirin for their illness (but may have had physical therapy). 5% (1/18) were not certain if her mother had taken medication for her illness.

Hospitalizations. It was not required that mothers had to have been hospitalized for inclusion in the study, although 56% (10/18) of the medically ill mothers had been hospitalized for their illness at some point during the daughter's life. Three participants had mothers hospitalized one time; three others, two times; and three others, between four-six times. One last participant indicated her mother had been hospitalized "too many times to count". All mothers were hospitalized for a range of time between 3-21 days, and the daughters age at mother's hospitalization ranged from 6 months to 18 years old.

Current depression. This was not a criteria for inclusion, but is provided to facilitate comparisons to the children of depressed mothers. Only 10% (1/10) of the participants who indicated her mother also had symptoms of depression, also indicated that their mother was currently experiencing symptoms of depression. Of note, See Table 4 in Appendix A for comparisons of the sample of children of medically ill mothers vs. the sample of children of depressed mothers on the above-mentioned criteria.

Children of Non-Depressed Non-Medically Ill Mothers (Controls)

Alternatively, to have been considered a child of a non-depressed non-medically ill mother, the following criteria had to be met (All participants in this group met all criteria): a) the mother must not have experienced chronic mild forms of depression for longer than six months; b) the mother must not have experienced three or more of the symptoms needed to meet the criteria for a major depressive episode at any time in the participant's memory and must not be experiencing any depressive symptoms currently (or within the past year); and c) the mother must not have had a chronic medical illness (non life-threatening non-chronic illnesses were not excluded; for example, a benign tumor that was removed).

Interdiagnostic Agreement

Almost all diagnostic interviews were reviewed by a second rater (an advanced clinical psychology graduate student). A few interviews were not audiotaped due to either tape malfunction, or at the request of the participant. The second reviewer listened to the audiotape and indicated for every criteria whether the participant met this criteria and why. She also made a final judgement as to whether the participant met the overall criteria for the group. The second rater was

blind to the experimenters written notes (or opinions) from the diagnostic interview. There was 96% agreement between the experimenter and the second rater on whether a participant did or did not meet criteria for the group. One disagreement involved the second rater suggesting the participant not be included based on factors not included as criteria (for example, one subject who specified on the audiotape that she often did not live with her mother). The second disagreement was able to be resolved by checking the original mass screening questionnaire in order to confirm the information given. In the end, a decision was made to include these participants. When audiotaped versions of the diagnostic interview were not available, the notes of the experimenter (from the interview) were double checked with the information given on the mass screening questionnaire. Overall, 6 daughter of depressed mother group participants, 6 control group participants, and 3 daughter of medically ill mother group participants were excluded because they did not meet criteria for inclusion.

Subject Selection Procedure

First, during mass screening, participants were selected from the information they gave on the mass screening questionnaire. See Appendix C for a copy of this instrument. This measure was developed to screen for

potential participants in the study. It inquires about depressive symptoms and possible chronic illnesses that students' mothers may have experienced. This is a preliminary screening used to establish the groups included in the study. After completion of the experimental portion of the study, a diagnostic interview (described later) was conducted to confirm that the participants were appropriate for the group in which they had been placed based on the initial screening.

Second, all potential participants were contacted by telephone. They were told that the experimenter was interested in how people's "interactional styles" affect an interaction between two people, and that the experimenter would be interested in both their reaction to the interaction and the other participant's reaction to the interaction. After they gave verbal consent to participate in the study, they were asked to pick up a packet from a box in a designated place in the mailroom and to complete the following: The Participant Consent Form (See Appendix D for a copy of this form), The Demographic Questionnaire (See Appendix E for a copy of this form), The Beck Depression Inventory (BDI) (See Appendix F for a copy of this instrument), The Self-Perception Profile for College Students (See Appendix G for a copy of this instrument), The Children's Report of Parent Behavior Inventory (See Appendix H for a copy of

this instrument), and the Children's Perceptions of Interparental Conflict Scale (See Appendix I for a copy of this instrument). They returned the completed packet to the mailroom (with only a participant number on it), and were called back to participate in the second part of the study if their BDI was <= 18. Participants whose scores were above this cutoff were not called to participate in the second half of the study for ethical reasons. Only one potential control group participant and one medically-ill group participant was excluded because of being too depressed to participate. In contrast, six potential children of depressed mothers were excluded for this reason.

Experimental Procedure

Individual qualifying participants were scheduled for the experimental session. At the beginning of this session, the participant completed the Depression Adjective Checklist (DACL), and the State scale of the State-Trait Anxiety Questionnaire to obtain baseline indicators of anxiety and depression (See Appendices J and K, respectively, for a copy of these instruments). An additional BDI was given to the subject if her original BDI from the mailroom packet was more than two weeks old. This was done to exclude depressed persons and because BDI

scores can only be considered a reliable index of depression for a 2-week period.

Next the subject engaged in an interpersonal interaction with a confederate (one of two same sex 433 students from our lab group who was trained to be somewhat withdrawn and reticent according to the guidelines set forth by the experimenter). (For guidelines see Appendix L for a copy of the Confederate Questionnaire). The participant and confederate were told that together they were to create a list of seven items they would like to have with them if stranded together on a desert island. See Appendix M for the instructions given to the participant and confederate for the task. After each interaction, the confederate completed the conferate questionnaire (Appendix L) indicating if she had successfully followed each guideline. It was emphasized that the confederate should be careful to note any differences in her behavior. She was told that this was especially important because some behavioral differences would be unavoidable, and that detailed information about the interaction would help the experimenter to interpret the results. This was done to ensure that the confederate's behavior was as consistent as possible across all subjects. Data from the confederate questionnaires are included at the end of the method section.

The purpose of the 5-minute task was simply to provide a period of cooperative interaction between the participant and the confederate, which in turn provides the context for a negative feedback manipulation.

The participant and confederate were separated after the interaction, and the participant was asked to fill out the "feedback" form about the confederate. See Appendix N for a copy of this form. The participant was told that the other subject was filling out the form simultaneously in the next room. However, the confederate completed the Confederate questionnaire at this time. The participant was then presented with the fabricated negative feedback concerning the interaction with the confederate. The participant was told it was completed by the other participant (i.e., confederate). See Appendix O for a copy of the Negative Feedback Rating Form. After receiving the negative feedback, the participant completed the DACL, and state anxiety indicators again to assess her initial reactions to this stressor. Then the participant was told that after she filled out a few more questionnaires, she would once again interact with the other person (the confederate). The participant was told that her job was to make the interaction go more smoothly or "better", and that she would again be given feedback at the end of the interaction.

At this point in the procedure, the self-efficacy measure(s) were given (See Appendix P for a copy of these instruments) and the State-anxiety and DACL measures were given for the third time.

After completing the above measures, the participant was told that she would not be interacting with the other person again and that the negative feedback was false. She was told that the experiment was concerned with confidence in one's ability to cope with a stressful situation. The experimenter then suggested that she would like to ask the participant some questions about her mother's mood and medical symptoms while she was growing up. After receiving verbal consent, the experimenter did a diagnostic interview to determine if the participant qualified for placement in the group in which she was initially placed based on the mass screening questionnaire completed during mass screening.

During the diagnostic interview, the experimenter questioned the participant to determine whether the participant's mother met each of the criteria needed for inclusion in the experimental group in which she was originally placed. For example, the experimenter assessed the number of (DSM III-R) symptoms of major depression the participant remembered her mother experiencing when she was depressed. This final interview was done last to ensure that the student's knowledge of why she was

selected for the study did not affect her behavior. As noted earlier, the diagnostic interviews were audiotaped and checked by another graduate student to ensure diagnostic reliability.

After the diagnostic interview, the participant was told that she was selected to be a participant because she indicated that her mother either had or had not been depressed when she was a child, or because she grew up with a mother with a chronic illness. She was told that we were investigating how having a mother with some type of condition that may be "stressful" may or may not affect her confidence when coping with stress. At this time, she was given the debriefing form to read (See Appendix Q for a copy of the debriefing form).

Before the participant left, she completed the participant pledge asking her not to discuss the experiment with her friends/classmates (See Appendix R for a copy of this form). She also completed the final participant comment form asking how she felt about the experiment (in particular the deception involved), and to assess if she knew anything beforehand about the deception involved (See Appendix S for a copy of this form). Several participants suggested that they were suspicious that either the feedback was false or that the confederate was not really a student, but none indicated she was sure. For the daughters of depressed mothers and the control

group, 8% (2/26) and 15% (4/27) respectively, indicated they were suspicious. For the daughters whose mothers were medically-ill (only), and medically-ill with symptoms of depression, 13% (1/8) and 40% (4/10), respectively of each group indicated they were suspicious.

Finally, a fourth and last DACL was completed in order to assess mood. If the score was greater than 14 (i.e., a score greater than one standard deviation above the mean in comparison to other college students), then a modified (elation) mood induction procedure was utilized. This procedure includes a subset of the original Velten elation mood induction statements and was included to counteract any remaining depressed affect (Frost & Green, 1982). (See Appendix T for a copy of this instrument and an explanation of the procedure). The experimenter also assessed why the participant continued to experience negative affect and answered questions, provided reassurance, etc. as necessary. This occurred only a few times and each time the participant indicated that something had happened before the experiment that had been upsetting and was affecting her mood (e.g., a fight with boyfriend).

Total time to complete the study was approximately 1- 1 1/2 hours. It took 20-30 minutes to complete the initial questionnaires at home and one hour for the

experimental session. (See Appendix U for a complete flowchart of the experimental procedure.)

Standard Measures

Depression Adjective Checklist (DACL)

The DACL checklists (Lubin, 1981) were used to measure depressive affect in the current study (Appendix J). There are seven alternate forms of the DACL. Forms A-D were used and counterbalanced across participants each of the four times the measure was given during the study. See Appendix J for a complete report on the psychometrics of this instrument. The following are the means and standard deviations for college females reported by Lubin (1981) for Forms A-D. Means range from 7.41 - 7.87; standard deviations range from 4.96 - 5.48.

State-Trait Anxiety Questionnaire (STAI)

The state form of the STAI (Spielberger, 1970) was used in the current study to measure "situational", i.e., state, anxiety (Appendix K). There are no alternate forms, thus, the same form was used at each of the three times it was given. Norms in the STAI manual (Spielberger, 1970) indicate that the mean for a college female is 38.76, and the standard deviation is 11.95. See Appendix K for a complete report on the psychometrics of this instrument.

Beck Depression Inventory (BDI)

The BDI (Beck, 1988) was used in the current study to assess depressed mood (Appendix F). The BDI is a 21-item self-report inventory which measures the level of depressed mood over the past two weeks. The self-report is answered on a scale of severity ranging from 0 to 3 with higher numbers indicating more severe symptoms of depression. See Appendix F for a complete report on the psychometrics of this instrument.

Self-Perception Profile

Self-concept was assessed with The Self-Perception Profile for College Students (Harter & Neeman, 1986) and is titled "What I am Like" in Appendix G. It includes thirteen subscales which are broken down into two main categories of competencies (the first five domains or subscales) and social relationships (the last seven domains), in addition to global self-worth. The various domains include the following: Creativity, Intellectual Ability, Scholastic Competence, Job Competence, Athletic Competence, Appearance, Romantic Relationships, Social Acceptance, Close Friendships, Parent Relationships, Humor, Morality, and Global Self-worth. Norms and a complete report on the psychometrics of this instrument are reported in Appendix G.

Children's Perception of Interparental Conflict Scale

Participants perceptions of marital conflict between their parents were assessed with The Children's Perception of Interparental Conflict Scale (CPIC) (Grych, Seid, & Fincham, 1992) (Appendix I). This measure was included in the study to measure marital conflict between parents as perceived by the daughter. The CPIC includes three subscales: Conflict Properties, Threat, and Self-Blame. The final version of the measure consists of 51 items on nine subscales. No norms were reported for this instrument. See Appendix I for a complete report on the psychometrics of this instrument.

Children's Report on Parent Behavior Inventory

The CRPBI- 30 (Schaefer, 1965) is a shortened version of the 108 item revision by Schludermann and Schludermann (1973) of Schaefer's original CRPBI (Schaefer, 1965) (Appendix H). The CRPBI-30 is intended to be a short instrument which gives information about the three major dimensions equivalent to the CRPBI-108.

The CRPBI has 30 questions describing mother and 30 describing father. Only the 30 questions describing mother were utilized in the current study. The CRPBI instructions ask the participant to think about their relationship with their mother. There are three

subscales/dimensions: Acceptance/Rejection (Dimension A); Psychological Control/Psychological Autonomy (Dimension P); and Firm Control/Lax Control (Dimension F). For the A-30 dimension, mother form, females had a mean of 25.03 and a standard deviation of 4.93. For the P-30 dimension, mother form, females had a mean of 15.68 and a standard deviation of 5.18. For the F-30 dimension, mother form, females had a mean of 18.00, and a standard deviation of 4.75. See Appendix H for a complete report on the psychometrics of this instrument.

Three additional questions were added at the end of the measure to indicate the amounts of criticism, hostility and irritability that the daughter perceived her mother to exhibit within their relationship. These items were added because criticism, hostility, and irritability are often discussed in the literature as problematic behavior by depressed mothers, but were not included on the CRPBI-30. The items were phrased in the following manner: "My mother is a person who is often hostile when interacting with me". Participants indicated whether this was a lot like (worth 3 points), sort of like (worth 2 pts), or not like (worth 1 pt.) their mother.

It is important to note that Wierson and Forehand's research (1992) underscores the importance of utilizing adolescent subjective experience. They found adolescent perceptions of how family stressors disrupted their

relationship with their mother to be more predictive of their adaptive functioning than their mother's actual behavior. In other words, the adolescent's perception of a disruption in the parent-child relationship better predicted adolescent functioning than other more objective measures.

Measures Created for the Study

Self- Efficacy Scale

This scale is a method of assessing a person's sense of self-efficacy as defined by Bandura (1977) (Appendix P). The scale is always specific to the particular situation being assessed. The typical assessment procedure (Bandura, Adams, & Beyer, 1977) consists of breaking down a task intended for treatment into discrete behavioral units that are arranged in increasingly more difficult steps. For each task that the participant indicates he/she is able to complete, the participant estimates the strength or certainty of the belief that she or he will successfully carry out the task. In addition, an identical rating procedure is conducted for an unfamiliar (and hypothetical) although conceptually related task.

Similarly, the current study included two self-efficacy measures, one assessing a specific situation and one assessing a hypothetical situation. The "specific"

self-efficacy scores apply to the participant's assessment of whether she can improve her feedback if interacting with the same student; the "hypothetical" self-efficacy scores apply to the participant's assessment of whether she could improve if she interacted with a new student whom she does not know.

As in previous studies, our participants answered by indicating yes or no (whether they could complete the task), and by placing how certain they were they could complete the task on a Likert scale ranging from 10 - 100. Thus, the magnitude variable indicates the total number of times the participant said she could improve (by either one, two or three points for each of the eight items on the form) and was weighted by the number of points by which she said she could improve. For example, if she said yes to a question asking if she could improve by 3 points, she received three points for that yes. The strength variable is an average of the participant's ratings (on a 10-100 likert scale) of how sure/certain she was that she would successfully improve by the number of points she indicated on her previous answer.

A self-efficacy expectation as measured by this scale is defined as "the subject's belief that he or she can adequately carry out the necessary behaviors and cognitions required to produce a successful outcome in a specific situation what will unfold in the near future."

See Appendix P for a complete report on the psychometrics of this instrument.

Demographic Questionnaire

This form simply requested demographic information needed to describe the participant groups. It asked for information such as the participant's age, race, sex, parents' marital history, sibling information, and parental education and income (See Appendix E for a copy of this questionnaire).

Confederate Questionnaire

This form was developed to ensure that the confederates are consistent in their behavior when participating in the interpersonal interaction with the participants in the study (Appendix L). The confederate questionnaire form also helped to ensure that the negative feedback the participant received was believable and also that the level of interpersonal skill of the participant did not affect the behavior of the confederate. It was completed by the confederate after each interaction.

First, it is important to note that there were two confederates. Confederate 1 interacted with approximately 88% of the participants in the control and depressed groups; Confederate 2 interacted with approximately 12% of the participants in the control and depressed groups. For the group with medically-ill mothers without any

depressive symptoms, Confederate 1 interacted with all of the participants. For the group with medically-ill mothers with some depressive symptoms, Confederate 1 interacted with 70% of the participants, and Confederate 2 interacted with 30% of the participants. The discrepancy in the participant group with medically-ill mothers is a result of the fact that it was not planned apriori that the medically-ill group would be split into two groups.

For the current study, it was important to answer two questions: a) did the two confederates behave significantly differently from each other, and b) did either of the confederates behave differently across the four groups. To answer these questions, a one way analysis of variance was conducted with seven "cells" acting as the between variable. Each "cell" is composed of one confederate's data for one group. For example, Cell 1 would be data for Confederate 1 and Group 1. There were seven cells because Confederate 2 did not interact with any of the participants from the ill only group. The dependent variables were the nine items from the confederate questionnaire.

Analyses examining the main effect for cell (Table 5), and all of the planned comparisons (Table 6) yielded nonsignificant results with one exception. Planned comparisons indicated that confederate 1 reported behaving different with the ill only group on one item (Table 6).

Confederate 1 indicated that she made the second statement "I'm not sure if I would want to bring that" slightly less often with the ill only group than with the other three groups. In other words, they were not able to say this in response to the participant's fourth suggestion because the participant never made a fourth suggestion. Beyond this one exception, no systematic differences were found in the behavior of the confederates across the four groups, nor in comparison to each other (See Table 7 for a summary of means).

CHAPTER III

RESULTS

Overview

The following data analyses were completed in collaboration with Dr. David Herr, a statistical consultant with the Mathematics Department at the University of North Carolina at Greensboro.

There are several important methodological issues that should be noted. First, the group of participants with mothers who were medically ill initially encompassed participants with mothers who were both ill and depressed (but did not meet criteria for the depressed group)(n=10), and participants with mothers who were only ill (n=8). As a consequence, all analyses were conducted in two ways: first, with this group intact; and, second, with this group split into two groups, according to mothers who were ill vs. mothers who were both ill and depressed. For parsimony, only the analyses with the four groups are described below. This decision was made because the positive aspects of making the ill group into two smaller homogeneous groups outweighed the negative aspect of the smaller sample sizes. This decision was supported by the

fact that the ill/depressed group often had very different sample means than the ill only group.

Second, it should be noted that outliers found during the initial examination of the data set were dealt with in the following manner: a) only outliers 3 1/2 inter-quartile ranges from the mean were removed, and b) only the participant's datum for that variable was removed i.e. the remainder of the participant's scores were kept in the data set and used in the other analyses. The latter decision was made because deleting the subject's entire data set would have substantially reduced the sample sizes. However, removing only the subject's specific datum causes the sample sizes to vary slightly for some of the analyses; thus, the sample sizes for each of the analyses are reported in the means tables in the appendices.

Finally, .10 was set as the p value required for "significance" for the statistical analyses. This decision was made for two reasons. First, there were a number of p values which fell between .05 and .10, with most p values in the analyses falling either below .10 or above .20. Few p values fell within the .10 and .20 range. Thus, it appeared that if the current study had obtained a larger sample, many of the analyses with p values falling within the .05-.10 range would have been likely to reach the .05 significance level. More

importantly, when examining the results with the p value set at .10 (versus when the p value was set at .05) a clearer pattern of results was illuminated that could be explained by theory. In other words, setting the p value at .05 seemed to obscure rather than reveal an understandable pattern of results. As a consequence, it seemed arbitrary to set the p value at .05 simply because of convention.

BDI Scores

Although the groups' scores from the BDI were not utilized in any of the analyses (they were used only as exclusion criteria), it is interesting to note that the depressed group had the highest BDI scores (M=8.27), the ill/depressed group had the second highest scores (M=6.40), the control group was next (M=4.25), and the ill only group had the lowest depression scores (M=3.13) (Table 8). A one way analysis of variance with group as the between variable, and BDI score as the dependent variable indicated significant differences between groups (Table 9). Planned comparisons indicated that the ill/ depressed and depressed groups were significantly different from the ill and control groups (Table 10).

Depression and Anxiety Variables

Hypotheses One and Three

Hypotheses one and three question whether the groups differ from each other in the amount of anxiety and depressive feelings they had in response to the negative feedback, and/or after being told they will have to interact with the confederate again and try to improve their ratings (and completing the self-efficacy measure).

Analyses of Covariance for the Depression and Anxiety Change Scores

To answer these questions, univariate analyses (ANCOVA's) were conducted with mothers diagnostic status serving as the between variable, time serving as the within variable, and the change in anxiety and depression scores serving as the dependent variables. Initial scores on the DACL and the STAI served as covariates. For example, the DACL scores at Time 1 were used as a covariate for the difference between DACL scores at Time 1 and Time 2. Likewise, the DACL scores at Time 2 were used as a covariate for the difference between DACL scores at Time 2 and Time 3. This same procedure was also done with the STAI scores. In addition, since age significantly influenced the change in DACL scores from Time 1 to Time 2, age was used as a covariate when the DACL change scores from Time 1 to Time 2 were used as the dependent variable.

Change in DACL Scores from Time 1 to Time 2
(with Age and DACL1 as Covariates)

After adjusting for DACL1 and for age, all of the groups depression scores increased from Time 1 to Time 2 (receiving the negative feedback), but only the scores of the depressed group and the ill depressed group significantly differed from zero (Table 11). Analyses indicated that there was a significant overall main effect for group status (Table 12). Planned comparisons between groups indicated the ill/depressed group was significantly different from all three of the other comparison groups (Table 13). The ill/depressed group had the greatest increase in depression (LSM=4.20), the ill only and depressed groups were next (with LSM=1.50 and 1.43 respectively), and the control group increased the least (LSM=.96).

It appears that the combination of having an ill mother who is also somewhat depressed leads to a significant increase in depression in reaction to a stressor in comparison to having a non-ill non-depressed mother (control), a depressed mother or a mother with a medical illness without depression. In contrast, hypothesis one suggested that the daughters of depressed mothers would have greater increases in depression in comparison to the ill only and control groups.

DACL Scores from Time Two to Time Three

After adjusting for DACL2, several of the groups scores actually decreased from Time 2 (receiving the negative feedback) to Time 3 (after being told they were to do the interaction again and completing the self-efficacy instruments), although none of these decreases differed significantly from zero (Table 14). It is important to note that there was not a significant main effect for group status (Table 15), and none of the planned comparisons between these groups was significant (Table 13). The LSM's were as follows (a minus sign indicates a decrease from Time 2 to Time 3): controls (LSM=-.92), ill/depressed (LSM= -.85), depressed (LSM= -.41), and ill only (LSM=.23). This finding contradicts predictions. It was expected that all of the groups' scores would increase from Time 2 to Time 3, with the depressed group's increasing the most, that is, becoming the most depressed.

Anxiety

Anxiety from Time 1 to Time 2

After adjusting for STAI1, most of the groups' scores significantly increased from Time 1 to Time 2, with the exception of the control group whose scores slightly and nonsignificantly decreased (Table 16). There was a

significant main effect for group status (Table 17); and, planned comparisons indicated significant differences between the control group and all three of the other groups (Table 18). The LSM's were as follows: ill/depressed group (LSM= 5.75), ill only (LSM= 3.93), depressed (LSM= 3.75), and control (LSM= -.48). Again, it was expected that all of the groups' scores would increase, with the depressed groups' increasing the most. It was not expected that the increases of the ill only group and depressed group would be roughly equivalent.

Anxiety from Time 2 to Time 3

After adjusting for STAI2, most of the groups' anxiety scores increased again, with the exception this time of the ill/depressed group whose scores slightly decreased; but, none of these change scores differed from zero (Table 19). Overall, the main effect for group status was not significant (Table 20), and planned comparisons indicated no significant differences between the groups (Table 18). The LSM's were as follows: ill only (LSM= 1.20), controls (LSM= .98), depressed (LSM= .12), and the ill/depressed (LSM= -.33). It was predicted that all of the groups' scores would increase; however, it was also expected that the depression group's scores would increase the most. The findings that these

groups either decreased or increased only slightly was not expected.

Hypothesis Two

Self-efficacy variables. Hypothesis 2 questions whether the self-efficacy scores of daughters of depressed mothers differ from daughters of medically-ill mothers and daughters of non-depressed mothers. To investigate this hypothesis, planned comparisons were conducted in the context of 4 univariate analyses. Mothers' diagnostic status (group) served as the between variable, and the magnitude and strength scores for the specific and hypothetical measures were the dependent variables related to self-efficacy.

There are two self-efficacy measures, one assessing the specific situation and one assessing a hypothetical situation. Each yields a strength score and a magnitude score. In this study, the "specific" self-efficacy scores apply to the participant's assessment of whether she can improve her feedback if interacting with the same student; the "hypothetical" self-efficacy scores apply to the participant's assessment of whether she could improve if she interacted with a new student whom she does not know. The magnitude variable indicates the total number of times the participant said she could improve (by either one, two or three points for each of the eight items on the form)

and is weighted by the number of points by which she said she could improve. For example, if she said yes to a question asking if she could improve by 3 points, she received three points for that yes. The strength variable is an average of the participant's ratings (on a 10-100 likert scale) of how sure/certain she was that she would successfully improve by the number of points she indicated on her previous answer (See Appendix P for a copy of the self-efficacy measure).

Specific measure. For the specific magnitude measure, the group means were very similar (Depressed = 26.54, Control = 29.1, Ill = 29.0, Ill/depressed = 29.7) (Table 21). There was not a significant main effect for group status (Table 22), and planned comparisons indicated that there were no significant differences between any of the groups (Table 26).

For the specific strength measure, the group means were also very similar (ill only M=46.08, ill/depressed M=47.8, depressed M=41.4, and the control group M=39.5) (Table 21). There was not a significant main effect for group (Table 23). Furthermore, planned comparisons indicated no significant differences between any of the groups (Table 26).

It was expected that the depressed groups scores would be lowest on these measures, and the ill groups would also be lower than the controls. Generally, the

results are not as expected with the specific strength or specific magnitude measure. Overall, it seems all of the groups were pessimistic when asked about improving their scores in a future interaction with a person who had previously rated them poorly.

Hypothetical measure. Nevertheless, there were significant differences among the groups for variables related to the hypothetical situation. On the magnitude variable, the ill group had the lowest mean (M=35.63), then the depressed group (M=37.8), the ill/depressed group (38.6) and the control group had the highest mean (M=45.4) (Table 21). There was a significant main effect for group (Table 24). In addition, planned comparisons indicated the ill/depressed, the depressed and ill groups all were significantly different from the control group (Table 26).

On the strength variable, the group's means were again very similar (ill/depressed M= 58.9, ill only group M= 55.3, depressed M= 50.5, and controls M= 49.5) (Table 21). There was not a significant main effect for group (Table 25), and planned comparisons indicated there were no significant differences between any of the pairwise comparisons of the groups (Table 26).

In summary, it appears that when given the opportunity to improve with a new person, the control group became more optimistic than any of the other groups.

Hypothesis Four

Self-perceptions. Hypothesis 4 questions whether the self-perceptions of daughters of depressed mothers significantly differ from daughters of nondepressed mothers and daughters of medically ill mothers. To answer this question, planned comparisons were made in the context of 13 univariate analyses for each subscale. The perceived competence scales, and global self-worth subscales of The Self-Perception Profile served as the dependent variables. Mother's diagnostic status served as the between variable.

First it is important to mention that the sample sizes for the self-perception variables are slightly smaller than the earlier analyses, because some questionnaires were misplaced by an undergraduate lab member. The sample sizes are as follows: Depressed = 23, Ill only = 8, Ill/Depressed = 9, Control = 23.

Summary of self-perception results. Overall, the depressed group appear to have lower self-perception scores than the other three groups (Table 27). This is true for every subscale except for creativity and athletic competence. The depressed group also had significantly lower global self-worth than the other three groups (Table 27). These results were consistent with predictions. However, the other three groups' global self-worth were

very similar, and this was unexpected. It was expected that the ill groups would have lower self-perceptions than the controls. Furthermore, if one examines the norms for the self-perception measure given in Appendix G, one will also notice that the depressed group is consistently below the mean for college age females, whereas the other groups are mostly at the mean or above the mean.

Overall, there were significant main effects for group for the morality, close friendship and intellectual ability subscales (Table 28).

Planned comparisons indicated the following (Table 29): For Job Competence and Appearance, there were no significant differences between groups. For Scholastic Competence, the depressed group's mean was significantly lower than the ill only group. For Parent Relationships, the depressed group was significantly lower than the control group and the ill only group. In addition, the ill only group's mean was significantly higher than the depressed and ill/depressed groups. For Close Friendships and Humor, the depressed group's mean was significantly lower than both the ill only and control groups. For both the Intellectual Ability, and Morality subscales, the depressed group's mean was significantly lower than all three of the other groups. For Romantic Relationships, the depressed group and ill only groups were significantly lower than the control group. For the Social Acceptance,

Creativity and Athletic Competence subscales, the depressed group's mean was significantly lower than the control group.

Since the previous analyses did not support the hypotheses that Daughters of Medically Ill mothers would report less depression and anxiety and higher self-efficacy than Daughters of Depressed mothers on the depression, anxiety and self-efficacy measures, ancillary analyses examining differences between the groups on the marital turmoil, and parenting variables are summarized in Appendix V. Significant differences between the Daughters of Medically Ill Mothers and Daughters of Depressed mothers were found with the marital turmoil and parenting measures. See Table 30 for a complete summary of the study's results.

CHAPTER IV

DISCUSSION

This research was designed to investigate if daughters of depressed mothers differ from daughters of nondepressed mothers and daughters of medically-ill mothers in the following ways: a) in the amount of anxiety and depression they experience in initial response to a stressor; b) in their assessment of whether they can successfully overcome the stressor; c) in the amount of anxiety and depression they experience after assessing their ability to overcome the stressor, and when anticipating participating in another stressful situation; d) in their perceptions of themselves and their global self-worth; e) in the amount and type of marital turmoil/conflict they perceive in their parents' marriage; and, f) in their perceptions of their mothers' parenting practices. Finally, this research examines g) whether marital conflict, global self-worth, and/or parenting behavior are unique predictors of anxiety, depression, and self-efficacy (i.e., do they provide unique information beyond what can be known by using diagnostic status as a predictor)?

Discussion of Results and Implications

Results suggest that the critical factor which puts one "at-risk" for lower self-efficacy in the current study's social paradigm and for higher levels of depression and anxiety after receiving neutral/negative interpersonal feedback is living with a chronically debilitated mother (including daughters of depressed mothers, daughters of medically ill mothers, and daughters of medically ill mothers who also experience symptoms of depression) and not specifically living with a depressed mother. However, future research will need to explore the relationship of reduced self-efficacy to subsequent levels of depression (particularly clinical depression) for these groups. This is particularly important because the current study found all three at-risk groups to be more vulnerable to a stressor than the control group, and previous literature suggests that daughters of depressed mothers are more likely to experience episodes of diagnosable depression than other at-risk groups (Downey and Coyne, 1990).

In addition, potential mediating mechanisms included in the current study (marital conflict, self-perceptions, and the mother-daughter relationship) do not appear to be critical factors that lead to increased anxiety and/or depression for the medically ill groups.

Perhaps living with a medically ill mother (with or without accompanying depression--a chronic stressor) increases a daughter's vulnerability to anxiety in the face of a stressor because her coping skills have often been overwhelmed in the past (Jaenicke et al., 1987). In other words, daughters who have been overwhelmed by stressors in the past are conditioned (e.g., through classical conditioning) to experience greater levels of negative affect in the face of a stressor. Conceivably, as the number of chronic stressors experienced increases, overall levels of negative affect increase; thus, for daughters of medically ill mothers with depression, one also observes a significant increase in depression. Finally, consistent with self-efficacy theory (Bandura, 1987), higher levels of anxiety influence daughter's perceptions of self-efficacy. In other words, higher levels of anxiety serve as a signal that she is less capable of effectively coping with the stressful situation, i.e., she feels less confident in being able to improve her score. These findings support studies such as Billing and Moos (1985) and Richters and Pellogrinia (1989) which suggest that the chronicity or duration of a stressful experience (i.e., living with a debilitated mother) is what may be most important in determining risk for maladjustment.

Results also suggest that having a mother who experiences recurrent episodes of clinical levels of depression is associated with the daughter perceiving greater levels of marital conflict in her parent's marriage, having a reduced sense of global self-worth and other self-perceptions, and having a less satisfying relationship with her mother. These appear to be associated with greater levels of anxiety within a stressful situation, and thereby reduced self-efficacy in overcoming the stressor. Finally, only maternal acceptance and global self-worth appear to have a significant influence on the relationship between diagnostic status and self-efficacy. None of the other parenting, marital turmoil, or global self-worth variables significantly influenced the relationship between diagnostic status and levels of depression and anxiety.

Depression and Anxiety In the Face of a Stressor

It appears that the combination of having an ill mother who is also somewhat depressed leads to a significant increase in levels of depression in reaction to a stressor in comparison to having a non-ill non-depressed mother (control), an ill only mother, or a chronically depressed mother. As mentioned above, it seems possible that as the number of chronic stressors experienced throughout childhood increases, overall levels

of negative affect increase; thus, daughters of medically ill mothers with depression have significant increases in both anxiety and depression in response to a stressor. This explanation is consistent with a conceptualization of depression and anxiety as interrelated aspects of a more general construct labeled "negative affect." This suggestion is supported by research (Dobson, 1985; Maser & Cloninger, 1990) that report high levels of comorbidity between anxiety and depression (r=.61).

The Question of Depression as a Particular Vulnerability for the Daughters of Depressed Mothers

It is difficult to determine why the daughters of depressed mothers did not report greater depression in response to the stressor in comparison to the ill only and control groups. In addition to the research literature, there are other indicators in the current study that suggest that the daughters of depressed mothers may be likely to experience greater depressive affect under stress than the other groups. For example, when examining initial BDI scores, the depressed and the ill/depressed groups have the highest depression scores and are both statistically significantly different from both the ill only and control groups. Moreover, on both the DACL and the STAI, only the depressed group is above the mean (at baseline) given in the norms for college age females.

Finally, only 1/19 potential daughter of medically ill mother participants and 1/27 potential control group participants were excluded because of being too depressed to participate (e.g., had a BDI score greater than 18 indicating moderate levels of depression), whereas 6/32 potential daughters of depressed mothers were excluded for this reason.

Several factors may have contributed to the depressed group reporting levels of depression more similar to the ill only and control groups, a finding that was unexpected. First, the sample utilized college students, a group that is likely to be higher functioning than the population of children of depressed mothers at large. Neighbors et al. (1993) defined academically competent adolescents who also experienced high levels of parental marital conflict as "resillient" in comparison to adolescents with similar backgrounds who were not academically competent, based on research that suggests measures of cognitive competence are sensitive to environmental stressors (Simmons, Burgeson, Carlton-Ford, & Blyth, 1987). Using similar reasoning, it appears that the results of the study (in terms of the daughters of depressed mother's depressive reactions to stress) may have been attenuated by the sample used.

Second, daughters of depressed mothers with the highest BDI scores were excluded from the study for

ethical reasons, as elaborated previously. Thus, even among the academically competent, only the highest functioning daughters of depressed mothers were included.

A third explanation may be that the study purposely included participants with chronic conditions, but the severity of depressive chronic conditions in the present study is likely to be less than other studies which used children of parents in treatment (often inpatient samples). For example, only 19% of the depressed mothers in this sample had been hospitalized, and only 46% were taking psychiatric medication. One might speculate that if this study had used mothers with more severe depression, group differences may have been greater.

A related explanation is that some of the participants included in the daughters of depressed mothers' group did not meet the more stringent specifications originally proposed for this group. Again, this may mean that the current study is utilizing daughters of mothers with less severe depressive disorders than previous research.

Finally, but most importantly, the present findings may be attenuated because sample sizes are small, thus making it more difficult to detect differences in a population. This is especially true for the ill groups; thus one must interpret nonsignificant results comparing the ill groups with the other groups with caution.

Unexpected Results for the Ill only Group

Beyond pointing to a small sample, it is difficult to explain why the ill only group have increases in their anxiety scores from Time 1 to Time 2, and reduced self-efficacy scores that mirror the scores of the depressed group. Some studies comparing outcomes for these two groups have also found that children of medially ill parents were indistinguishable from children with a depressed parent (Hammen, Gordon, Burge, Adrian, Jaenicke, & Hiroto, 1987; Hirsch et al., 1985). However, a preponderance of studies suggest that although children of medically ill mothers experience greater adjustment problems than children of control mothers, their difficulties are typically not as severe as depressed children, and they are not diagnosed with depression as often (Anderson & Hammen, 1993; Hammen & Goodman-Brown, 1990; Klein et al., 1988).

Overall, it is difficult to compare the results of the current study to previous investigations including children of medically ill mothers for the following reasons. First, the current study is the first to examine self-efficacy and stress reactivity with these risk groups. Second, it is difficult to compare the medically ill group to previous studies, because detailed explanations about the characteristics of the medically ill mothers were often not included in previous

literature, and because it was difficult to obtain a homogeneous group in the current study. For example, Hammen and colleagues included mothers with diabetes and rheumatoid arthritis in several of her studies. She reports a mean hospitalization rate for this group of 5.5 hospitalizations, and a standard deviation of 8.8; however, very little additional information is provided beyond the age of onset for symptomatology and the organizations through which the subjects were recruited. By comparison, the present sample excluded diabetics because participants denied ever noticing their mothers displaying any symptoms. This seems to suggest that the diabetic mothers who were potential participants in the present sample were very different from the population in Hammen's research. Furthermore, illnesses used in the current study's ill/depressed group such as kidney disease and lupus may be more serious than those used by Hammen and her colleagues; thus, they may have a greater impact on the functioning of patients' offspring. In contrast, many mothers (6/8) included in our ill only group have never been hospitalized; thus, their conditions are likely to be less serious than in previous studies.

Third, some studies exclude medically ill mothers who meet criteria for a psychiatric disorder; however, they do not differentiate between medically ill mothers who do experience mild-moderate symptoms of psychiatric

disorder and those who do not endorse any significant psychiatric symptoms (Hammen, Burge, & Adrian, 1991; Hammen, Burge, & Stansbury, 1990). The current results suggest that this is an important distinction. Other studies have not assessed for psychiatric disorders in any manner (Hirsch, Moos, & Reischl, 1989). In the current study, mothers with multiple medical problems, or with the most severe medical problems were more likely to be seen as having accompanying depressive symptoms by their daughters; thus, they were most often included in the ill/depressed group. Finally, many studies including maternal medical illness as a control group often exclusively focused on the population of interest (children of depressed mothers), and did not discuss the results for children of medically ill mothers as a distinct group in enough detail to draw conclusions (Hammen et al., 1987; Hammen, Burge, & Adrian, 1991; Jaenicke et al., 1987).

Self-Efficacy and Self-Perception Variables

Overall, the self-efficacy magnitude scores of all of the groups were lower on the specific measure than on the hypothetical measure. It seems reasonable that participants would be much more pessimistic when predicting their improvement on the specific measure in comparison to the hypothetical measure because they had

just received mediocre scores from the person with whom they would have to interact again; however, it was expected that there would be greater differences between groups.

When asked to predict how much they would improve if interacting next with a new person whom they do not know, all three of the at-risk groups' magnitude scores were significantly lower than the control groups' magnitude scores. However, there were no significant differences between any of the groups in the strength of their convictions. In other words, the three risk groups marked that they could improve on significantly less items than the controls; yet, all of the groups indicated they were at the same level of certainty (approximately) when they marked yes they could improve on an item.

The finding of reduced self-efficacy in all three of the "at-risk" groups is consistent with Downey and Coyne's (1990) and Weintraub's (1987) suggestion that adverse living conditions lead to general maladjustment. This finding is also consistent with research that suggests that risk groups other than children of depressed mothers show evidence of poorer adjustment when compared to controls (Fendrich, Werner, & Weissman, 1990; Hops et al., 1987).

In the current study, the self-efficacy findings and self-perception findings appear to be inconsistent.

On the self-efficacy hypothetical measure, all three of the at-risk groups' magnitude scores were significantly lower than the control groups' magnitude scores. On the self-perception measure, the depressed group had significantly lower self-perception scores than all three of the other groups. This is true for almost every subscale (including global self-worth). In addition, when examining the norms, the depressed group is consistently below the mean for college age females; whereas the other groups (including the ill only and ill/depressed group) are mostly at the mean or above the mean.

The self-perception instrument used in the current study assesses perceptions of competence in specific areas of functioning that have been established through research as salient to college students (Harter, 1988). The Global Self-Worth Subscale measures an overall feeling of worth that Harter suggests is not captured by the assessment of specific competencies. Thus, Harter's theoretical model suggests that self-concept is both uni-dimensional and multi-dimensional. She believes it is important to assess both specific perceptions, and a more global feeling of worth. Nevertheless, her model does not address the conceptual relationships between the constructs of self-efficacy and global self-worth, self-concept, or self-perceptions.

It is likely that the self-efficacy instrument in the current study measures confidence in overcoming adversity (previous negative feedback) when attempting to master a stressful interpersonal situation. In other words, the self-efficacy instrument measures confidence in obtaining positive feedback in a future interpersonal situation even though one has received negative feedback in the past. Self-efficacy is defined by Bandura (1977) as involving two distinct processes, response-outcome expectancies and efficacy expectations. On the one hand, an outcome expectancy is defined as a person's estimate that if they execute a given behavior, it will lead to a certain outcome. Efficacy expectations, on the other hand, are the conviction that one can successfully execute the behavior required to produce the outcome. Bandura does not directly address the relationship between self-efficacy and self-concept, but uses the term self-efficacy to describe a cognitive mechanism (i.e., construct) that he proposes leads to psychological and behavioral changes. Furthermore, he does not address the issue of generalizeability of self-efficacy perceptions beyond stating that some experiences create circumscribed mastery expectations, and other experiences instill a more generalized sense of efficacy that extends well beyond one given situation.

Thus, the relationship between global self-worth (or self-concept/self-perceptions) and self-efficacy is not clear. It may be that the constructs are related, and that perceptions of self-efficacy are likely to generalize to other less similar situations if the individual (or population) generally has more negative global self-worth e.g., negative self-perceptions in many different areas. In other words, self-efficacy's influence on behavior may be more situation specific than overall feelings of self-worth.

Depression and Anxiety as a Consequence of Reduced Self-Efficacy

It was expected that reduced self-efficacy would lead to increasing levels of anxiety and depression. However, upon examining the change in depression and anxiety from Time 2 to Time 3, these scores did not increase as expected; and, there were not the expected differences among groups.

It seems that the participants may have been "cheered up" (especially the control group) by either the chance to do the interaction again (and possibly improve their score), or by the positive manner in which the self-efficacy instruments were worded (See Appendix P for the wording of this instrument). It was expected that anxiety and depression would increase again from Time 2 to Time 3

for those groups with lower self-efficacy because of the combination of anticipating that they had to do another interaction and attempt to improve their scores, and because completing the self-efficacy instruments would underscore their lack of confidence in successfully improving. If the results indicated that lower self-efficacy scores were associated with increased anxiety and depression, these results would have been consistent with Hammen and her colleagues (1987, 1988, 1990) ideas that lower self-efficacy leads to subsequent feelings of depression.

It is important to note that low self-efficacy could still increase the risk for future depression in the following manner. Low self-efficacy may not necessarily lead to immediate feelings of anxiety and depression, but could lead to the person putting forth less effort to overcome a stressful situation. Because of this, they may receive less reinforcement from the environment (than if they expended more effort) and consequently experience more depressive feelings in the future.

Strengths of the Study

The current study focused on a population that has been neglected in the past (young adults with clinically depressed mothers whose disturbance is less severe than in previous studies). It is one of the few studies to

differentiate and examine differences between daughters of medically-ill mothers with and without accompanying depressive symptoms. In addition, it uses standard operational criteria to define depression, includes more homogeneous depression groups because it does not mix unipolar and bipolar mothers mothers together as one population, and gives adequate attention to assessing the severity and chronicity of the disorder (Hammen et. al, 1987). Finally, it is one of the first studies to examine variables related to stress, coping, and family interaction variables that may mediate vulnerability to depression (Hammen et al., 1987).

It also complied with many of the methodological suggestions made by Downey and Coyne (1990) such as conducting careful pretesting of the characteristics of the diagnostic groups, examining cross-sectional differences among those groups, and allowing retrospective reports to establish diagnostic status. Downey and Coyne believe that research in this area needs to focus first on uncovering the critical variables of being raised in an environment that places one "at-risk" for psychopathology. This reccomendation is made in order to establish the likelihood of major effects of variables before large amounts of money and effort are spent on longitudinal studies including variables of questionable utility.

Limitations of Study and Suggestions for Future Research

It is important to consider that this study is limited in its use of one specific (negative) interpersonal event that may or may not be comparable to the experience of a real-life stressful experience. An assumption has been made that negative interpersonal feedback would be distressing for most college-age females. This experience may or may not generalize to other negative life experiences either interpersonal-oriented, achievement-oriented, or otherwise. This is one of the limitations of self-efficacy theory i.e., the question of the degree of generalizeability of self-efficacy beliefs across situations.

An additional limitation of the study is the use of the daughter, and a single informant to index maternal depression. Although it appeared that college age participants were quite knowledgeable about their mothers' affective states, it will be important for future studies to confirm these findings by utilizing interviews with the mothers themselves. In addition, future studies should consider utilizing a two by two design with normal mothers, depressed only mothers, medically ill only mothers, and a group of participants with mothers who experience clinical levels of depression and chronic

medical illness. This design may illuminate critical factors that influence offspring functioning. Studies may also benefit from placing more stringent control on the interaction between the confederates and participants. One could argue that systematic differences among interactions may have been possible (because the depressed and/or ill groups may have less social skills); however, this argument is not compelling because of the various controls utilized in the current study to prevent systematic differences.

One must also exercise caution when interpreting results of these analyses because of the small sample sizes of these groups. The small sample sizes have increased the potential for error in making generalizations. The current study is also limited in terms of its generalizability to other groups. The results of this study are only applicable to college-age females who grew up with a chronically depressed mother who did not experience periods of mania. It does not apply to living with a depressed father, nor being a son of a depressed mother. Thomas and Forehand (1991) have suggested that paternal depression can be as important and/or more important factor in a child's functioning as maternal depression. However, they found maternal depressive mood was more significantly related to daughters internalizing problems, and fathers'depressive

mood was significantly related to sons' internalizing problems. Forehand and Smith (1986) also suggested the possibility of a gender of parent x gender of child interaction. They found paternal mood, but not maternal mood, to be associated with adolescent female depressed mood. Tannenbaum and Forehand (1994) also found that a good father-adolescent relationship served to buffer an adolescent from maternal depressed mood.

Finally, the current study does not attempt to examine all of the ways in which the experience of having a depressed mother may differ across the participants. For example, it does not explain how concurrent maternal personality disorders may alter the experiences of the offspring of affectively disordered individuals. Future research would benefit from replicating the current study with a larger sample and including variables such as lifetime histories of stressors and personality disorder in both the mothers and offspring.

It is also important to note that establishing an elevated level of a risk factor is only the beginning of developing a risk-model. Future research must show that these risk factors predict future episodes of clinical depression and must include a description of the specific mechanisms through which vulnerability is transferred from one generation to the next. This includes how reduced self-efficacy and greater stress reactivity leads to

episodes of clinical depression for children of depressed mothers. For children of medically ill mothers, maternal factors (such as severity of maternal medical illness, and the chronicity and severity of maternal depression), and individual factors (such as global self-worth and coping behavior) that may moderate the relationship between reduced self-efficacy and subsequent levels of depression must be further delineated.

In other words, the aspects of models one and two that were tested in the current study must be replicated with larger (and more diverse) samples, and those aspects of the models not tested must be examined in future research. This is especially important because previous research (Hammen, Gordon, Burge, Adrian, Jaenicke & Hiroto, 1987; Klein, Clark, Dansky & Margolis, 1988) has found that children of depressed mothers are more vulnerable to (clinical levels of) depression in comparison to both children of medically-ill mothers, and children of non-depressed non-medically ill mothers. Since previous studies do not always differentiate between medically ill mothers with and without symptoms of depression, this will be an important component to include when clarifying the roles of "stress reactivity" and self-efficacy in placing one at-risk for depression. Finally, the roles of parental marital conflict, global self-worth, and parenting behavior as risk factors for daughters of

depressed mothers and protective factors for daughters of medically ill mothers for developing clinical levels of depression should also be explored in future research.

Clinical Implications of the Study

Knowledge of the behavior characteristics of at-risk groups can lead to effective interventions in therapy through targeting maladaptive behaviors; thus, reducing the likelihood that at-risk individuals will become depressed. For example, perceptions of reduced self-efficacy in overcoming a negative stressor could be targeted in therapy, and relaxation techniques could be taught to reduce levels of negative affect in the face of a stressor. However, future research must first establish the mechanism(s) through which these risk factors do or do not lead to subsequent depression before one can establish the best methods for intervention. If more than one risk group exhibits a risk factor but only one of the groups show a greater propensity for depression, then factors moderating the relationship between the at-risk factors and subsequent illness must be explored before one can establish effective methods for clinical intervention.

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APPENDIX A

TABLES

Table 1

ANOVA Values for Each Group with the Demographic Variables as Dependent Variables

Demographic Variable	F	P Value
Age	3.81	.0140
Times Mom was married	7.68	.0002
Times Dad was married	1.58	.2017

Table 2

Group Means, Ranges and Standard Deviations for Each Demographic Variable

	Age of Participant			Times Mom Married			Times Dad Married		
	Mean	Range	SD	Mean	Range	SD	Mean	Range	SD
Depressed	19.64	18-31	2.8	1.80	1-3	.71	1.52	1-3	.82
Control	18.61	18-21	.85	1.23	1-3	.51	1.24	1-2	.43
Ill	18.38	17-21	1.2	1.00	1	0	1.00	1	0
Ill/Depressed	21.10	18-26	3.2	1.10	1-2	.32	1.40	1-3	.84

Table 3

Chi Square Analyses with the Demographic Variables as the Dependent Variables

	P Value	Chi-Square Value
Amount the participant saw the parent with whom they did not live	14.979	.663
Length of visits	12.143	.668
Hollingshead status	6.788	.871

Table 4

Comparisons of Daughters of Depressed Mothers and Daughters of Medically Ill Mothers on Criteria Assessed During the Diagnostic Interview

Daughters of Depressed Mothers	Daughters of Medically Ill Mothers
1. 77% met DSM III-R criteria	1. No comparable DSM III-R criteria
2. 77% met age of onset (by age 7)	2. 55% met age of onset (by age 7) 77% (by age 9)
3. 92% met chronicity No comparable exacerbation criteria	3. 100% met chronicity criteria 94% met periods of exacerbation criteria
4. 46% took psychiatric medication	4. 78% took medication for their medical illness
5. 19% were hospitalized for depression	5. 56% were hospitalized for their medical illness
6. 73% were currently depressed	6. 10% were currently depressed

Table 5

Anova Table for Each "Cell" with the Confederate Questionnaire Items as the Dependent Variables

	F Value	P Value
Item 1 Warm-Cold Dimension	.65	.6918
Item 2 Asked Questions One and Two	Both confederates indicated they asked these questions every time	
Item 3 Smiling Behavior	.13	.9917
Item 4 Number of Suggestions Made	.23	.9648
Item 5 Contradicted Participant the First Time	.32	.9249

	F Value	P Value
Item 6 Contradicted Participant the Second Time	1.55	.1757
Item 7 Only Asked One Reciprocal Question	Both confederates indicated they were successful on this item with every participant	
Item 8 Initiated no More Than One Conversation	Both confederates indicated that they did not initiate any conversation with participants	
Item 9 Degree Confederate Felt Participant was Engaged in the Task	.85	.5374

Table 6

Planned Contrasts for Each Confederate Questionnaire Item

Contrast	DF	Mean Square	F Value	P Value
Dependent Variable: Item 1 Warm-Cold Dimension				
Conf1 across Groups	3	3.27591053	.61	.6113
Conf2 across Groups	2	.44444444	.98	.3802
Conf1 vs.Conf2	1	.04711797	.10	.7480
Dependent Variable: Item 2 Smiling Behavior				
Conf1 across Groups	3	.80384692	.24	.8681
Conf2 across Groups	2	.11111111	.03	.9674
Conf1 vs.Conf2	1	.03151698	.01	.9230
Dependent Variable: Item 5 Number of Suggestions Made				
Conf1 across Groups	3	.03961297	.25	.8602
Conf2 across Groups	2	.00000000	.00	1.000
Conf1 vs.Conf2	1	.07444995	.47	.4945

Appendix A (Cont.)

Dependent Variable: Item 6 Contradicted Participant First Time				
Conf1 across Groups	3	.02166121	.50	.6857

Contrast	DF	Mean Square	F Value	P Value
Conf2 across Groups	2	.00000000	.00	1.000
Conf1 vs.Conf2	1	.00754709	.17	.6787
Dependent Variable: Item 7 Contradicted Participant Second Time				
Conf1 across Groups	3	.26181567	2.41	.0748
Conf2 across Groups	2	.222222222	1.02	.3648
Conf1 vs.Conf2	1	.01789448	.17	.6860
Dependent Variable: Item 9 Degree Confederate Felt Participant was Engaged in the Task				
Conf1 across Groups	3	.56331397	.36	.7842
Conf2 across Groups	2	.93750000	.59	.5551
Conf1 vs.Conf2	1	3.65334850	2.32	.1331

Note. Each Cell is composed of one confederates data for one group. For example, Cell one would be data for confederate 1 and group 1 (depressed group).

Table 7

Means and Standard Errors for Items on the Confederate Questionnaire

		N	Mean	Std Error
Dependent Variable: Contradicted Participant Second Time				
Conf 1	Depressed	23	.91304348	.06866588
Conf 1	Control	24	.87500000	.06722012
Conf 1	Ill Only	7	.57142857	.12446748
Conf 1	Ill/Depressed	7	1.0000000	.12446748
Conf 2	Depressed	3	.66666667	.19012721
Conf 2	Control	3	1.0000000	.19012721
Conf 2	Ill/Depressed	3	1.0000000	.19012721
Dependent Variable: Warm-Cold Dimension				
Conf 1	Depressed	23	5.34782609	.14029604
Conf 1	Control	24	5.41666667	.13734211
Conf 1	Ill Only	8	5.12500000	.23788350
Conf 1	Ill/Depressed	7	5.57142857	.25430816
Conf 2	Depressed	3	5.66666667	.38846214
Conf 2	Control	3	5.66666667	.38846214
Conf 2	Ill/Depressed	3	5.0000000	.38846214
Dependent Variable: Smiling Behavior				
Conf 1	Depressed	23	6.69565217	.38155337
Conf 1	Control	24	6.50000000	.37351977
Conf 1	Ill Only	8	7.00000000	.64695521
Conf 1	Ill/Depressed	7	6.28571429	.69162422
Conf 2	Depressed	3	6.66666667	1.05647344
Conf 2	Control	3	6.33333333	1.05647344
Conf 2	Ill/Depressed	3	6.66666667	1.05647344

		N	Mean	Std Error
Dependent Variable: Number of Suggestions Made				
Conf 1	Depressed	23	2.86956522	.08279607
Conf 1	Control	24	2.87500000	.08105280
Conf 1	Ill Only	8	3.00000000	.14038757
Conf 1	Ill/Depressed	7	2.85714286	.15008062
Conf 2	Depressed	3	3.00000000	.22925194
Conf 2	Control	3	3.00000000	.22925194
Conf 2	Ill/Depressed	3	3.00000000	.22925194
Dependent Variable: Contradicted Participant First Time				
Conf 1	Depressed	23	.95652174	.04353484
Conf 1	Control	24	.91666667	.04261821
Conf 1	Ill Only	8	1.00000000	.07381691
Conf 1	Ill/Depressed	7	1.00000000	.07891359
Conf 2	Depressed	3	1.00000000	.12054250
Conf 2	Control	3	1.00000000	.12054250
Conf 2	Ill/Depressed	3	1.00000000	.12054250
Dependent Variable: How Much Confederate Felt Participant was Engaged in Task				
Conf 1	Depressed	23	8.60869565	.26192317
Conf 1	Control	24	8.25000000	.25640838
Conf 1	Ill Only	8	8.50000000	.44411235
Conf 1	Ill/Depressed	7	8.28571429	.47477607
Conf 2	Depressed	3	8.00000000	.88822470
Conf 2	Control	3	8.00000000	.72523243
Conf 2	Ill/Depressed	3	7.00000000	.72523243

Table 8

Means and Standard Errors for the BDI

Group	N	Mean	Std Error
Depressed	26	8.27	.88991530
Controls	27	4.25	.87327990
Ill only	8	3.13	1.60431762
Ill/Depressed	10	6.40	1.43494530

Table 9

Anova for BDI Scores

Source	DF	Type III SS	Mean Square	F	P Value
Group	3	382.734289	94.244763	4.58	.0056
Error	67	1379.575579	20.590680		

Table 10

Planned Contrasts for BDI Scores

Contrast	*t* Value	*p* Value
Depressed vs. Ill Only	2.80	.0033
Depressed vs. Controls	3.22	.001
Depressed vs. Ill/Depressed	-1.11	.2722[a]
Ill Only vs. Controls	- .62	.5367[a]
Ill Only vs. Ill/Depressed	1.52	.0664
Ill/Depressed vs. Controls	1.27	.1035

Note. *p* values are for one-tailed *t* tests unless designated.

[a]indicates a *p* value for a two-tailed *t* test.

Table 11

Least Square (Adjusted) Means for the Change in DACL Score From Time 1 to Time 2 Adjusted for DACL 1 and Age

Group	N	DACL 2-DACL1	Std Error	P Value
Depressed	25	1.4396500	.70667589	.0459
Controls	26	.96061783	.64150973	.1394
Ill only	8	1.50024858	1.11707151	.1842
Ill/ Depressed	10	4.20305727	1.03637044	.0001

Table 12

ANCOVA for Change in DACL Score from Time 1 to Time 2 with Age and DACL1 as Covariates

Source	DF	Type III SS	Mean Square	F Value	P Value
AGE	1	58.690491	58.690491	6.37	.0142
DACL1	1	236.518506	236.518506	25.65	.0001
GROUP	3	67.587360	22.529120	2.44	.0724

Table 13

Planned Contrasts for Change in DACL Score from Time 1 to Time 2 (with DACL1 and Age as Covariates) and Change in DACL Score from Time 2 to Time 3 (with DACL2 as a Covariate)

Contrast	Time 1-2		Time 2-3	
	t	*P* Value	*t*	*P* Value
Depressed vs. Ill Only	-.04	.5175	-.55	.7067
Depressed vs. Controls	.46	.3218	.56	.7200
Ill Only vs. Control	.43	.6680[a]	.95	.3438[a]
Ill/Depressed vs. Ill	1.78	.0402	-.76	.7756
Ill/Depressed vs. Control	2.67	.0049	.07	.7756
Ill/Depressed vs. Depressed	2.12	.0384[a]	-.37	.7104[a]

Note. *p* values are for one-tailed *t* tests unless designated.

[a]indicates a *p* value for a two-tailed *t* test.

Table 14

Least Square (Adjusted) Means for the Change in DACL Score from Time 2 to Time 3 Adjusted for DACL2

Group	N	DACL3-DACL2	Std Error	P Value
Depressed	26	-.41241148	.63132845	.5159
Control	27	-.92825608	.62506140	.1423
Ill	8	.28183944	1.10342520	.7992
Ill/ Depressed	10	-.84691029	.98867069	.3948

Table 15

ANCOVA for Change in DACL Score from Time 2 to Time 3 (Adjusted for DACL2)

Source	DF	Type III SS	Mean Square	F Value	P Value
DACL2	1	179.484362	179.484362	18.43	.0001
GROUP	3	10.219670	3.406557	.35	.7894

Table 16

Least Square (Adjusted) Means for the Change in Anxiety Score from Time 1 to Time 2 Adjusted for STAI 1

Group	N	ANX 2-ANX 1	Std Error	P Value
Depressed	24	3.75163003	1.34829496	.0071
Control	27	-.48044394	1.24725467	.7014
Ill	8	3.92930046	2.26938106	.0882
Ill/ Depressed	10	5.74984619	2.04296477	.0065

Table 17

ANCOVA for Change in STAI Score from Time 1 to Time 2 (Adjusted for STAI 1)

Source	DF	Type III SS	Mean Square	F	P Value
STAI 1	1	44.959826	44.959826	1.09	.2999
GROUP	3	393.623499	131.207833	3.19	.0296

Table 18

Planned Contrasts for Change in STAI Score from Time 1 to Time 2 (Adjusted for STAI 1) and Time 2 to Time 3 (Adjusted for STAI 2)

	Time 1-2		Time 2-3	
Contrast	t	P Value	t	P Value
Depressed vs. Ill Only	-.07	.9467	-.53	.7024
Depressed vs. Controls	2.27	.0797	-.59	.7215
Ill Only vs. Control	1.71	.0929[a]	.11	.9163[a]
Ill/Depressed Vs. Ill	.60	.2762	-.65	.7426
Ill/Depressed vs. Control	2.62	.0055	-.71	.7611
Ill/Depressed vs. Depressed	.81	.4232[a]	-.25	.8066[a]

Note. p values are for one-tailed t tests unless designated.

[a]indicates a p value for a two-tailed t test.

Table 19

Least Square (Adjusted) Means for the Change in Anxiety Score from Time 2 to Time 3 Adjusted for STAI2

Group	N	ANX 3-ANX 2	Std Error	P Value
Depressed	25	.12124199	1.02459219	.9062
Control	27	.98986221	.99038498	.3213
Ill Only	8	1.20317015	1.75465154	.4953
Ill/ Depressed	10	-.33826906	1.56929301	.8300

Table 20

ANCOVA for Change in STAI Score from Time 2 to Time 3 (Adjusted for STAI2)

Source	DF	Type III SS	Mean Square	F Value	P Value
STAI2	1	73.4691545	73.4691545	2.98	.0888
GROUP	3	19.7785839	6.5928613	.27	.8483

Table 21

Means and Standard Errors for the Self-Efficacy Variables

	Specific Measure		Hypothetical Measure	
	MEAN	SEM	MEAN	SEM
Depressed				
Magnitude	26.54	3.0314	37.81	2.3466
Strength	41.37	4.1345	50.52	4.7411
Ill				
Magnitude	29.00	5.4649	35.63	4.2305
Strength	46.08	7.4536	55.31	8.5472
Controls				
Magnitude	29.19	3.0314	45.44	2.4950
Strength	39.50	4.2164	49.53	4.6525
Ill/Depressed				
Magnitude	29.70	4.8879	38.60	3.7838
Strength	47.77	6.6666	58.85	7.6448

Table 22

ANOVA for Self-Efficacy Magnitude Scores from the Specific Measure

Source	DF	Type III SS	Mean Square	F Value	P Value
GROUP	3	124.771429	41.590476	.17	.9136
ERROR	66	15768.6000	238.918182		

Table 23

ANOVA for Self-Efficacy Strength Scores from the Specific Measure

Source	DF	Type III SS	Mean Square	F Value	P Value
GROUP	3	630.527350	210.175783	.47	.7022
ERROR	65	28888.861534	444.444024		

Table 24

ANOVA for Self-Efficacy Magnitude Scores from the Hypothetical Measure

Source	DF	Type III SS	Mean Square	F Value	P Value
GROUP	3	971.646305	323.882102	2.26	.0898
ERROR	63	9019.965635	143.174058		

Table 25

ANOVA for Self-Efficacy Strength Scores from the Hypothetical Measure

Source	DF	Type III SS	Mean Square	F Value	P Value
GROUP	3	777.169129	259.056376	.44	.7228
ERROR	67	39157.06953	584.433874		

Table 26

Planned Contrasts for Self-Efficacy Measures

	Specific Measure				Hypothetical Measure			
	Magnitude		Strength		Magnitude		Strength	
Contrast	*t*	*p* Value	*t*	*p* Value	*t*	*p* Value	*t*	*p* Value
Dep vs Ill Only	-.39	.35	-.55	.29	.45	.69	-.49	.31
Dep vs. Controls	-.62	.27	.32	.63	-2.23	.02	.15	.56
Ill Only vs. Control	-.03	.49	.77	.78	-2.00	.03	.59	.72
Ill/Dep vs. Ill	.10	.58	.17	.57	.52	.70	.31	.62
Ill/Dep vs. Control	.09	.54	1.05	.85	-1.51	.07	1.04	.85
Ill/Dep vs. Dep	.55	.58[a]	.82	.42[a]	.18	.86[a]	.93	.36[a]

Note. *p* values are for one-tailed *t* tests unless designated.

[a]indicates a *p* value for a two-tailed *t* test.

Table 27

Means and Standard Errors for the Self-Perception Subscales

	DEPRESSED		CONTROL		ILL		ILL/DEP	
	MEAN	SEM	MEAN	SEM	MEAN	SEM	MEAN	SEM
JOB COMPETENCE	3.20	.12	3.33	.12	3.38	.21	3.39	.20
SCHOOL COMPETENCE	2.77[a]	.13	3.00	.13	3.22[a]	.22	3.20	.22
SOCIAL ACCEPTANCE	2.97[a]	.17	3.40[a]	.17	3.00	.29	3.19	.27
APPEARANCE	2.48	.16	2.62	.16	2.56	.27	2.58	.25
PARENT RELATIONSHIPS	3.20[ab]	.15	3.50[b]	.15	3.81[ac]	.26	3.22[c]	.24
CLOSE FRIENDSHIP	3.20[ac]	.12	3.60[c]	.12	3.82[a]	.22	3.55	.19
INTELEC ABILITY	2.99[abc]	.13	3.26[b]	.13	3.46[a]	.21	3.53[c]	.20
MORAL	3.12[abc]	.13	3.53[c]	.13	3.56[a]	.22	3.75[b]	.24

	DEPRESSED		CONTROL		ILL		ILL/DEP	
	MEAN	SEM	MEAN	SEM	MEAN	SEM	MEAN	SEM
ROMANTIC RELATIONS	2.50[a]	.16	3.03[ab]	.16	2.56[b]	.27	2.69	.25
HUMOR	3.28[ab]	.11	3.52[b]	.11	3.68[a]	.18	3.44	.18
CREATIVITY	2.71[a]	.17	3.13[a]	.17	2.66	.29	3.19	.27
ATHLETIC COMPETENCE	2.10[a]	.17	2.50[a]	.17	2.06	.29	2.62	.27
GLOBAL SELF-WORTH	2.89[abc]	.13	3.30[a]	.13	3.27[b]	.24	3.33[c]	.21

Note. The Sample Sizes for the Self-Perception subscales are as follows: Depressed n=23, Ill Control n= 23, Ill Only n=7, and Ill/Depressed n=9.

Note. Means with the [abc] superscripts are significantly different at $p < .10$; however, some may also be significant at the .05 and .01 level.

Table 28

ANOVAS for Each Self-Perception Subscale as a Dependent Variable

	F Value	P Value
Job Competence	.37	.7767
Scholastic Competence	1.57	.2063
Social Acceptance	1.21	.3134
Appearance	.14	.9373
Parent Relations	1.78	.1610
Close Friendship	3.07	.0349
Intellectual Ability	2.38	.0791
Morality	2.77	.0497
Romantic Relations	1.96	.1300
Humor	1.57	.2072
Creativity	1.60	.1990
Athletic Competence	1.46	.2357
Global Self-Worth	1.98	.1276

Table 29

Planned Contrasts for the Self-Perception Measure

Contrast	Global Self-Worth t	Global Self-Worth P Value	Job Competence t	Job Competence P Value	Scholastic Competence t	Scholastic Competence P Value
Depressed vs. Ill Only	-1.38	.0858	-.74	.2297	-1.76	.0416
Depressed vs. Controls	-2.14	.0183	-.75	.2270	-1.25	.1077
Ill Only vs. Control	- .08	.4693	.20	.5801	.86	.8041
Ill/Depressed Vs. Ill	.18	.5711	.05	.5914	- .10	.4599
Ill/Depressed vs. Control	.15	.5576	.27	.6068	.74	.7687
Ill/Depressed vs. Depressed	1.75	.0853[a]	.84	.4056[a]	1.64	.1065[a]

Planned Contrasts for The Self-Perception Measure

Contrast	Social Acceptance t	Social Acceptance P Value	Appearance t	Appearance P Value	Parent Relationships t	Parent Relationships P Value
Depressed vs. Ill Only	- .10	.4614	-.27	.3942	-2.06	.0217
Depressed vs. Controls	-1.81	.0379	-.63	.2658	-1.42	.0808
Ill Only vs. Control	-1.20	.1172	-.18	.4279	1.05	.8500
Ill/Depressed vs. Ill	.49	.6873	.06	.5234	-1.67	.0502

Contrast	Social Acceptance t	Social Acceptance P Value	Appearance t	Appearance P Value	Parent Relationships t	Parent Relationships P Value
Ill/Depressed vs. Control	- .65	.2598	-.12	.4521	- .97	.1679
Ill/Depressed vs. Depressed	.71	.4816[a]	.35	.7268[a]	.09	.9264[a]

Planned Contrasts for Self-Perception Measure

Contrast	Close Friendships t	Close Friendships P Value	Intellectual Ability t	Intellectual Ability P Value	Morality t	Morality P Value
Depressed vs. Ill Only	-2.52	.0072	-1.93	.0292	-1.72	.0456
Depressed vs. Controls	-2.37	.0104	-1.52	.0665	-2.23	.0149
Ill Only vs. Control	.90	.8145	.84	.7970	.12	.5960
Ill/Depressed Vs. Ill	- .92	.1812	.20	.5792	.58	.7168
Ill/Depressed vs. Control	- .19	.4261	1.12	.8668	.80	.7870
Ill/Depressed vs. Depressed	1.59	.1166[a]	2.26	.0273[a]	2.33	.0237[a]

Planned Contrasts for Self-Perception Measure

Contrast	Romantic Relationships t	Romantic Relationships P Value	Humor t	Humor P Value	Creativity t	Creativity P Value
Depressed vs. Ill Only	- .20	.4228	-1.94	.0285	.18	.5722
Depressed vs. Controls	-2.32	.0119	-1.60	.0579	-1.72	.0455
Ill Only vs. Control	-1.47	.0732	.80	.7851	-1.42	.9191
Ill/Depressed vs. Ill	.35	.6358	- .98	.1645	1.36	.9102
Ill/Depressed vs. Control	-1.11	.1368	- .40	.3439	.20	.5788
Ill/Depressed vs. Depressed	.64	.5276[a]	.74	.4605[a]	1.49	.1421[a]

Planned Contrasts for Athletic Competence Subscale of the Self-Perception Measure

Contrast	t	P Value
Depressed vs. Ill Only	.10	.4585
Depressed vs. Controls	-1.52	.0665
Ill Only vs. Control	-1.20	.8824
Ill/Depressed Vs. Ill	1.39	.9159

Contrast	*t*	*p* Value
Ill/Depressed vs. Contro	.47	.6806
Ill/Depressed vs. Depresse	1.61	.1118[a]

Note. *p* values are for one-tailed *t* tests unless designated.
[a]indicates a *p* value for a two-tailed *t* test.

Table 30

Results

Depression and Anxiety Variables	
BDI Scores	
Depressed and Ill/Depressed > Ill only Depressed and Ill/Depressed > Controls	
TIME 1 TO TIME 2	**TIME 2 TO TIME 3**
DACL Scores	
Ill/Depressed > All three other groups	No Significant Differences
STAI Scores	
All three other groups > Controls	No Significant Differences
Self-Efficacy Variables	
Hypothetical Magnitude	
Controls > All three other groups	
Hypothetical Strength	No Significant Differences
Specific Magnitude	No Significant Differences
Specific Strength	No Significant Differences
Self-Perception Variables	
All three other groups > Depressed (Including Global Self-Worth)	
Marital Turmoil	
Conflict Properties and Threat Subscales	
Depressed > All three other groups	
Self-Blame Subscale	No Significant Differences

Children's Report of Mother's Behavior

Acceptance Subscale

Ill only and Controls > Depressed

Psychological Control Subscale

Depressed > Ill only and Control
Ill/Depressed > Ill only

Behavioral Control Subscale — No Significant Differences

Hostility Item

Depressed > All three groups

Irritability Item

Depressed > All three groups

Criticism Item — No Significant Differences

Do Marital Conflict, Global Self-Worth, and Parenting Behavior Contribute Unique Variance to Model?

For Anxiety and Depression Variables- None contribute beyond diagnostic status

For Self-Efficacy Variables - Perceived Acceptance and Global Self- Worth contribute beyond diagnostic status

APPENDIX B

DIAGNOSTIC INTERVIEW FORM

DIAGNOSTIC INTERVIEW

PART A

DAUGHTERS OF DEPRESSED MOTHERS

_____ a) The mother's difficulty must have begun prior to or beginning in the participant's early childhood (by age 7)

_____ b) The condition must have been chronic (If F is met then this condition is met also)

_____ c) DSM-III-R criteria for Major Depression must be met (the depressive episodes must meet or exceed the moderate level of severity of the DSM-III-R criteria for Major Depression Recurrent)

Criteria for Major Depression

To meet criteria for "Recurrent"

_____ Two or more Major Depressive Episodes (each seperated by at least two months of return to more or less usual functioning (If there has been a previous Major Depressive Episode, the current episode of depression need not meet the full criteria for a major depressive episode)

Criteria for Episode

At Least FIVE of the following symptoms have been present during the same two-week period and represent a change from previous functioning; AT LEAST ONE OF THE SYMPTOMS IS EITHER 1) depressed mood or 2) loss of interest of

pleasure. (DO NOT INCLUDE SYMPTOMS THAT ARE CLEARLY DUE TO A PHYSICAL CONDITION, MOOD-INCONGRUENT DELUSIONS OR HALLUCINATIONS, INCOHERENCE, OR MARKED LOOSENING OF ASSOCIATIONS.)

_____ Depressed mood most of the day, nearly every day

_____ markedly diminished interest or pleasure in all, or almost all, activities most of the day, nearly every day

_____ significant weight loss or weight gain when not dieting (e.g. more than 5% of body weight in a month), or decrease or increase in appetite nearly every day

_____ insomnia or hypersomnia nearly every day

_____ psychomotor agitation or retardation nearly every day

_____ fatigue or loss of energy nearly every day

_____ feelings of worthlessness or excessive or inappropriate guilt (which may be delusional) nearly every day (not merely self-reproach or guilt about being sick)

_____ diminished ability to think or concentrate, or indecisiveness, nearly every day

_____ recurrent thoughts of death (not just fear of dying), recurrent suicidal ideation without a specific plan, or a suicide attempt or a specific plan for committing suicide

****

_____ A. It cannot be established that an organic factor initiated and maintained the disturbance (Has to meet this criteria)

_____ B. The disturbance is not a reaction to a death of a loved one (Has to meet this criteria)

_____ C. At no time during the disturbance have there been delusions or hallucinations for as long as two weeks in the absence of prominent mood symptoms (i.e., before the mood symptoms developed or after they have remitted).

_____ D. Not superimposed on Schizophrenia, Schizophreniform disorder, Delusional disorder, or Psychotic disorder NOS.

_____ E. Has never had a manic episode or an unequivocal hypomanic episode

<u>Criteria for manic episode</u>

Manic = Has to have criteria A, B and C

Hypomanic = has criteria A and B

_____ A. A distinct period of abnormally and persistently elevated, expansive, or irritable mood.

_____ B. During the period of mood disturbance, at least three of the following symptoms have persisted (four if the mood is only irritable) and have been present to a significant degree:

_____ 1) inflated self-esteem or grandiosity

_____ 2) decreased need for sleep, e.g., feels rested after only three hours of sleep

_____ 3) more talkative than usual or pressure to keep talking

_____ 4) flight of ideas or subjective experience that thoughts are racing

_____ 5) distractibility, i.e.,attention too easily drawn to unimportant or irrelevant external stimuli

_____ 6) increase in goal-directed activity (either socially, at work or school, or sexually) or psychomotor agitation

_____ 7) excessive involvement in pleasurable activities which have a high potential for painful consequences, e.g., the person engages in unrestrained buying sprees, sexual indiscretions, or foolish business investments

_____ C. Mood disturbance sufficiently severe to cause marked impairment in occupational functioning or in usual social activities or relationship with others, or to necessitate hospitalization to prevent harm to self or others.

_____ D. SAME AS A IN DEPRESSIVE EPISODE CRITERIA

_____ E. SAME AS C IN DEPRESSIVE EPISODE CRITERIA

_____ F. SAME AS D IN DEPRESSIVE EPISODE CRITERIA

_____ d) If the mother appeared to be dysthymic, she must also have had superimposed episodes of major depression

Criteria for Dysthymia

_____ A. Depressed mood for most of the day, more days than not, as indicated either by subjective account or observation by others for AT LEAST TWO YEARS

_____ B. Presence, while depressed, of at least two of the following:

_____ 1) poor appetite or overeating

_____ 2) insomnia or hypersomnia

_____ 3) low energy or fatigue

_____ 4) low self-esteem

_____ 5) poor concentration or difficulty making decisions

_____ 6) feelings of hopelessness

****

_____ C. During a two-year period of the disturbance, never without the symptoms in A for MORE THAN TWO MONTHS AT A TIME.

_____ D. No evidence of an unequivocal Major Depressive Episode during the first two years of the disturbance.

_____ E. SAME AS E IN DEPRESSIVE DISORDER

_____ F. SAME AS D IN DEPRESSIVE DISORDER

_____ G. SAME AS A IN DEPRESSIVE DISORDER

_____ e) If medication was used, symptoms must still have been apparent to the child

_____ f) The participant must rate the mother as having been depressed a significant amount of the time- not simply occasionally (thus the participant must not remember significant amounts of time with no depression, e.g., greater than four years)

_____ g) Only mothers with unipolar depression will be considered

_____ h) If symptoms of other psychiatric disorders are present, the mother may not have been hospitalized for the other disorder.

_____ i) In addition, the adult-child must not view the depression as secondary, but must be perceived by the child as the primary problem.

_____ j) The mother's hospitalization(s) for depression (including the number, when in the child's life, duration of stay) will also be assessed to add to the ability to describe the severity and chronicity of the mothers depressive disorders. However, maternal hospitalization for depression is not a necessary requirement for inclusion in the study.

PART B

DAUGHTERS OF MEDICALLY ILL MOTHERS

To be considered a child of a medically ill mother, the following criteria must be met

_____ a) The mother's difficulty must have begun prior to or beginning in the participant's early childhood (by age 7)

_____ b) The condition must have been chronic with distinct periods in which the symptoms exacerbate and then return to a minimum level. Examples of medical illness that would be appropriate for inclusion are diabetes and rheumatoid arthritis

_____ c) If medication was used, symptoms must still have been apparent to the child

_____ d) The participant must rate the mother as having been ill a significant amount of the time- not simply occasionally (thus the participant must not remember significant amounts of time with no symptoms, e.g., greater than four years)

_____ e) The examiner will also investigate whether any Axis 1 disorders such as depressive symptoms were present. If there was evidence of depression, an assessment will be conducted similar to the assessment for children of depressed mothers to assess the duration,

severity, and number of symptoms present. This will enable the group obtained to remain representative of persons with chronic illness, yet allow for statistical control of the effects of depression, if necessary.

_____ f) If symptoms of any other psychiatric disorders are present, the mother may not have been hospitalized for the other disorder.

_____ g) In addition, the adult-child must not view the medical illness as secondary, but must be perceived by the child as the primary problem. If the two problems are seen as equally important (e.g regarding the "stress" they caused in the family and the impact on the child's life) or the chronic illness is perceived as being secondary in importance in comparison to the depressive symptoms, the participant's data will be excluded from any of the groups.

_____ h) The mother's hospitalization(s) for the illness (including the number, when in the child's life, duration of stay) will also be assessed to add to the ability to describe the severity and chronicity of the mothers depressive disorders. However, maternal hospitalization for the illness is not a necessary requirement for inclusion in the study.

PART C

DAUGHTERS OF NON-DEPRESSED NON MEDICALLY-ILL MOTHERS

_____ a) The mother must not show evidence of chronic mild forms of depression for longer than six months

_____ b) The mother must not have experienced three or more of the symptoms needed to meet the criteria for a major depressive episode at any time in the participant's memory

_____ c) The mother must not have had a chronic medical illness.

APPENDIX C

MASS SCREENING QUESTIONNAIRE

SOCIAL SECURITY NUMBER _____

*** Reminder *** PLEASE COMPLETE BOTH PARTS OF THIS QUESTIONNAIRE -- A AND B

MASS SCREENING QUESTIONNAIRE

Please answer the following questions regarding your childhood to the best of your memory. Some questions may seem difficult to answer so please just do the best that you can. Write as much as you can remember if your memory is sketchy, and elaborate as often or in as much detail that you feel is needed. On questions that ask you to designate lengths of time for events- simply approximate if you are not certain.

PART A

Does your mother have any chronic medical illnesses (for example, rheumatoid arthritis or diabetes) ?

If yes, please explain.

IF NO, YOU MAY SKIP TO PART B OF THIS INSTRUMENT.

Was her illness diagnosed when you were a child?

Approximately how old were you when you FIRST remember her displaying <u>significant</u> symptoms of her illness? In other words, how old were you when you began to notice her illness affected her ability to do things with you, go places with you, how much and/or how often she could pay special attention to you etc..

How OFTEN did her illness affect her ability to do these things, i.e., her symptoms would become worse (for example all of the time, approx. 3-4 times a year, once a year, once a month etc.) and for HOW LONG a period at each time (two days, a week, several weeks, months)?

One example of an answer to this question would be she would become significantly impaired for several weeks at a time, 3-4 times a year or she would experience significant symptoms for about a week every 2-3 years.
If there were several time periods when her symptoms became significantly worse and you can remember when the episode occurred and/or how long it lasted then please answer for each individual episode you remember.

It may be helpful to use family events, holidays etc. to help you remember <u>when</u> ---please include how old you were if possible (approximations are fine)

What types of symptoms did your mother have, e.g. how could you tell she was not feeling well? Please elaborate as much as possible.

Did you mother seem to have at least a couple of symptoms most of the time, i.e., do you remember her feeling a little bit "ill" most of the time? Please Explain.

How long did these periods last?

Do you have any knowledge of her taking medication for her symptoms (either now or in the past)? How long has she been or (if in the past) how long was she on the medication?

Do you know the name of the medication?

Is she currently still taking this medication?

Do you have any knowledge of her taking any other medication(s)? (For example, for headaches, or other ailments, medical conditions etc.)

yes no

Do you know the name of the medication(s)?

How long has she been taking this medication(s)?

Is she currently still taking it/them?

If she did take medication for her illness, did it seem to make her symptoms go away completely or just help some? Please elaborate as much as you can.

Would you say your mother was ill (experiencing at least some symptoms) a significant amount of the time, or only occassionally or rarely etc..?

Was she ever hospitalized because of her illness?

How many times?

How old were you at each time?

How long was she in the hospital?

Was she ever hospitalized for any other medical problem?

Did she have any other significant medical problems (for ex. high blood pressure) that you can recall? (Include those you may have mentioned earlier when discussing medication and any others for which she did not take medication or for which she did not seek medical help)

If you reported that your mother had additional difficulties in addition to her primary medical illness- would you say that that illness was the primary problem?

Does your mother currently still experience symptoms of her illness?

Is she currently on medication or in treatment?

Is she considerably better now than she was when you were growing up, the same or worse ?

Did your mother's medical illness cause stress for yourself and/or your family?

PART B

Was your mother ever depressed when you were a child? (If she is currently depressed but was NEVER depressed when you were a child then answer no.)

yes no

IF NO YOU MAY DISCONTINUE COMPLETING THIS QUESTIONNAIRE. IF YES PLEASE CONTINUE

Approximately how old were you when you FIRST remember her being depressed? In other words, was she depressed off and on ever since you can remember or since you were a baby etc..

How often was she depressed and for how long at a time?

If there were several time periods when she was depressed and you can remember when the episode occurred and/or how long it lasted then please answer for each individual episode you remember.

It may be helpful to use family events, holidays etc. to help you remember <u>when</u> ---please include how old you were if possible (approximations are fine)

When your mother was depressed -- which of the following behaviors did she have? Please Indicate which behaviors you remember her displaying FOR AT LEAST A TWO WEEK PERIOD by marking an x in the blank next to the behavior.

Feelings of sadness or depressed mood most of the day, nearly every day _____

Feelings of guilt (either excessive guilt OR inappropriate guilt) _____

Decreased OR Increased appetite _____

Feelings of Worthlessness _____

Gain or Loss of weight _____

Sleeping very little or a lot of the time _____

Loss of interest in most or all activities (activities that she normally enjoyed) _____

Fatigue or loss of energy nearly every day _____

diminished ability to think or concentrate OR indecisiveness _____

recurrent thoughts of death (not just a fear of dying) or of suicide (or a suicidal attempt) _____

Did you mother seem to be a little bit down most of the time?
OR do you remember certain periods of time when she was a little bit down most of the time? yes no

How long did each of these periods last?

Do you have any knowledge of her taking medication for depression (either now or in the past)? How long has she been or (if in the past) how long was she on the medication?

Do you have any knowledge of her taking any other psychiatric medication? (For example, for panic attacks, anxiety etc.) How long has she been taking this medication? Is she currently taking ANY PSYCHIATRIC MEDICATION?

If she did take medication for depression, did it seem to make the depression go away completely or just help some ? Please elaborate as much as you can.
Would you say your mother was depressed a significant amount of the time, or only occassionally or rarely etc..?

Was she ever hospitalized because of being depressed?

How many times?

How old were you at each time?

How long was she in the hospital?

Was she ever hospitalized for any other psychiatric problem?

Did she have any other significant medical problems or psychiatric problems such as panic attacks, hallucinations, obsessions etc. that you can recall?

If you reported that your mother had additional difficulties in addition to depression- would you say that her depression was the primary problem?

Does your mother currently have symptoms of depression ?

Is she currently on medication or in treatment?

Is she considerably better now than she was when you were growing up, the same or worse ?

Did your mother's depressive illness cause stress for yourself and/or your family?

APPENDIX D

PARTICIPANT CONSENT FORM

Participant Consent Form

I agree to participate in the present study being conducted under the direction of Dr. Nelson-Gray. I understand that the procedure used in the study will involve filling out several questionnaires regarding my feelings about myself, others and particular situations. I also understand that it will involve engaging in an interpersonal interaction with another student and will require the completion of a subject rating form. I also understand that I will be receiving a similar rating from the same form. In addition, I understand that the study will involve an interview with an experimenter in which I may be asked to reveal some personal information regarding my background. I realize that I can decline to answer questions which I do not wish to answer. I also understand that I may find aspects of the study unsettling/upsetting and that I am free to terminate my participation at any time without penalty or prejudice.

The investigator has offered to answer any questions I may have concerning the experiment and has adequately explained the procedures and risks involved in the study. I am aware that further information may be obtained from or complaints may be addressed to the office of Research Services at the University of North Carolina (334-5878).

_____ _____

Day Month Year Signature of Participant

APPENDIX E

DEMOGRAPHIC QUESTIONNAIRE

DEMOGRAPHICS

SEX _____ AGE _____ RACE _____

PARENTS MARITAL STATUS

How many times has your mother and father been married?

Mother: _____ Father _____

Please provide the following information about your MOTHER'S marital history.

	Length (in years)	Your age at Time of Marriage	Lived w/Her of the Time ( ) if yes
Marriage #1	_____	_____	_____
Marriage #2	_____	_____	_____
Marriage #3	_____	_____	_____
Marriage #4	_____	_____	_____

Please provide the following information about your FATHER'S marital history.

	Length (in years)	Your age at Time of Marriage	Lived w/Him of the Time ( ) if yes
Marriage #1	_____	_____	_____
Marriage #2	_____	_____	_____
Marriage #3	_____	_____	_____
Marriage #4	_____	_____	_____

If you did not live with both your parents, how often did you see that parent with whom you did not live?

1 - NEVER
2 - EVERY FEW MONTHS
3 - EVERY MONTH
4 - EVERY TWO WEEKS
5 - WEEKLY
6 - 2-3 TIMES EACH WEEK
7 - DAILY

Typically how long were the visits?

1 - THERE WERE NONE
2 - A FEW MINUTES
3 - 1-2 HOURS
4 - HALF DAY
5 - WHYOLE DAY
6 - WEEKEND
7 - SEVERAL DAYS
8 - WEEK OR MORE

Regarding your brothers and sisters, please indicate below their relationshjips to you, including half-brothers, half-sisters, stepbrothers, and stepsisters, and their ages.

Relationship Age (in years)

_____

_____

_____

_____

What is or was your Mother's occupation? Please describe her main occupation. For example, car mechanic, typist for lawyer, grade school teacher, housekeeper, dentist, etc.

_____

What is your Mother's highest level of education? (circle the number of your answer)

1 - Grade school
2 - Some high school
3 - Completed high school
4 - Completed trade or business school
5 - Some college
6 - Completed college
7 - Some graduate work
8 - Completed graduate work

Total number of years of education _____.

What is or was your Father's occupation? Please describe his main occupation. For example, car nechanic, typist for lawyer, grade school teacher hyousekeeper, dentist, etc.

_____

What is your Father's highest level of education? (circle the number of your answer)

1 - Grade school
2 - Some high school
3 - Completed high school
4 - Completed trade or business school
5 - Some college
6 - Completed college
7 - Some graduate work
8 - Completed graduate work

Total number of years of education _____.

Which of the following categories best describes your total family income in 1993 before taxes (circle the number of your answer).

1 - less than $ 5,000

2 - $ 5,000 to $ 9,999

3 - $10,000 to $19,000

4 - $20,000 to $29,000

5 - $30,000 to $39,999

6 - $40,000 to $49,999

7 - $50,000 to $59,999

8 - $60,000 or MORE

APPENDIX F

BECK DEPRESSION INVENTORY

Psychometrics for the Beck Depression Inventory

(Continued from the Methods Section

Although the scale is labelled simply "BDI", most of the respondents infer the intent of the scale. Internal consistency of the BDI as rated by Cronbach's coefficient alpha is .81 with nonpsychiatric subjects. The test-retest reliabilities for nonpsychiatric samples range from .60 -.83. Concurrent and construct validity studies have correlations which range from .60 - .76 (Beck, Steer, & Garbin, 1988).

APPENDIX G

SELF-PERCEPTION PROFILE FOR COLLEGE STUDENTS

Psychometrics for the Self-Perception Scale for College Students (Continued from Method Section)

Each subscale of the Harter consists of four items, with the exception of the importance subscales which consist of two items each and the global self-worth subscale which consists of six items.

Reliabilities of the competence subscales were assessed by coefficient alpha, an index of internal consistency. These values ranged from .76-.92 for the group as a whole with only one subscale included in the proposed study (job competence) having a reliability score under .80. Job competence had a higher reliability during the summer (.84) possibly because it became more salient to the students when they were working.

A factor analysis was conducted to determine whether the twelve competence subscales constituted separate factors. Cattell's scree test indicated that twelve factors should be extracted corresponding with the intended twelve subscales. A principal components factor analysis was conducted with factor loadings ranging between .52-.92 with an average of .78 with no cross loadings over .35.

Evidence for convergent validity for three subscales, social acceptance, close friendships, and parent relationships is available. Moderate correlations (r =.51 p < .001) have been obtained for the (perceived) Social Acceptance and Campus Organization (social support) subscales with the assumption that students who feel popular would likely feel supported also. It was also assumed that competence in maintaining close friendships should be related to the social support one receives from close friends. Correlations between the two subscales do support this assumption (r = .67, p <.001). Also the ability to maintain a good relationship with one's parents was assumed to be related to the support one receives from them (as tapped by the social support subscales). Thus, indeed Parent Relationships was found to be correlated with social support from both mother (r = .61, p < .001) and father (r = .54, p < .001) (Harter & Neeman, 1986).

Subscale Means and standard Deviations (NORMS) for Female College Students for The Self-Perception Scale for College Students

	Mean	SD
Self-Worth	3.17	.62
Creativity	2.79	.72
Intellectual Ability	3.02	.68
Scholastic Competence	2.78	.66
Job Competence	3.31	.52
Athletic Competence	2.67	.88
Appearance	2.57	.76
Romantic Relationships	2.61	.85
Social Acceptance	3.17	.64
Close Friendships	3.42	.65
Parent Relationships	3.55	.61
Humor	3.54	.50
Morality	3.26	.67

APPENDIX H

CHILDEN'S REPORT OF PARENT BEHAVIOR INVENTORY

Psychometrics for the Children's Report of Parent Behavior Inventory (Continued from Method Section)

The CRPBI was developed by administering the CRPBI-108 to 444 17-18 year old university students of both sexes and one month later was administered to the same students. For each of the three dimensions, 10 items were chosen that had the highest correlations with a given dimension.

Factor analysis of the set of 10 A-30 items (Acceptance) describing mother showed that all these items loaded significantly (loadings ranged from .61 to .77) on a single principal-axes factor with an eigenvalue of 5.01 accounting for 96% of the common variance. The alpha value of A-30 was .75 for the Mother's Form.

Factor analysis of the set of 10 F-30 (firm control) items describing the mother showed that all these items loaded significantly (loadings ranged from .52 to .70) on a single principal-axes factor with an eigenvalue of 3.49 accounting for 87% of the common variance. The alpha value of F-30 was .65 for the Mother's form.

Factor analysis of the set of 10 P-30 (psychological control) items describing the mother showed that all these itmes loaded significantly (loadings ranged from .59-.73)

on a single principal-axes factor with an eigenvalue of 4.35 accounting for 94% of the common variance. The alpha value was .72 for the Mother's form.

Correlations between the CRPBI-108 and CRPBI-30 for all three dimensions were in the .90's suggesting that with respect to dimension scores each measure give equivalent information. Test-retest reliability for the A-30, P-30 and F-30 for mothers were .84, .84, and .79 respectively.

Correlations with other Family Measures - Olson Family Satisfaction Scale. Both scales were given to 470 18 year old university students of both sexes. Family satisfaction was significantly correlated with high acceptance and low psychological control by both parents. The best predictors of high family satisfaction were high acceptance by both parents and low psychological control by mother.

APPENDIX I

CHILDREN'S PERCEPTION OF INTERPARENT CONFLICT SCALE

Psychometrics for the Children's Perceptions of Interparental Conflict Scale (Continued from Method Section)

This measure was piloted on an independent group of 44 fourth and fifth graders which provided initial data on correlations among items. As a result of this study, some scales and individual items were reworded or eliminated. A second study was conducted on 222 fourth and fifth graders, and a third sample included 114 fifth graders. Most participants in these samples were white.

Internal consistency was asessed by computing coefficient alpha. Consistency estimates ranged from .61 to .83 in the two samples on the individual scales. Estimates were higher on the three subscales. Estimates ranged from .78 - .90 on the three factor-derived subscales. Test-retest correlations for these subcales ranged from .68 (threat) - .70 (conflict properties) and .76 (self-blame).

Factor analysis on the first sample was exploratory because the sample was small. Confirmatory factor analysis was used for the second sample to cross validate the solution obtained from the first sample. Through theoretical and statistical considerations, a three factor

model provided the most satisfactory solution. Variables were retained on a factor if their weights on the factor were at least .30. This three-factor solution was again found to be best with the second sample. Seven of the nine subscales showed clear and consistent loadings across the two samples. Because two subscales did not load consistently on the same factors they were dropped from the analysis. The authors suggest that the stability factor may have loaded inconsistently because of it's lower reliability. However they suggest that the triangulization factor may be meaningfully associated with self-blame/content or threat/coping efficacy.

The three subscales were moderately associated with correlations ranging from .31 -.52 across the two samples.

Validity of the subscales was first examined by comparing scores on the three CPIC scales with established parent-rated measures of marital conflict (OPS; Porter and Leary, 1980; as cited in Grych, Seid and Fincham) and interspousal aggression (Conflict Tactics Scale; Straus, 1979; as cited in Grych, Seid and Fincham, 1992). Because different raters are involved, correlations between the measures were not expected to be very high. As the parent-reported measures assess frequency and intensity, the CPIC scales frequency, intensity and resolution should be most strongly associated with the parent measures.

This was found to be true. This scale was significantly related to the OPS $r(81) = .30$ and the conflict tactics scale $r(78) = .39$ whereas the threat $r(85) = .06$; CTS $r(83) = .26$ and self-blame OPS $r(86) = .08$; CTS $r(84) = .10$. were not consistently associated with these measures.

Validity was also assessed by examining their relationship to children's adjustment. Significant relations were found between child perceptions of conflict and their adjustment: children reporting higher levels of frequent, intense, and poorly resolved conflict between their parents evidenced higher levels of both internalizing and externalizing problems. It is particularly notable that significant relations with the CPIC were found across raters of adjustment. Child reports of conflict were significantly related to judgements of adjustment by parents, techers, and peers, providing greater confidence in the robustness of the relation between children's perceptions of conflict and adjustment problems. Although the correlations generated by the child-report CPIC and parent-report OPS were not significantly different, the CPIC was a more consistent predictor of children's adjustment. The same general pattern of results were found for boys and girls. The only difference for boys and girls is that higher levels of

conflict wre related to teacher/peer reports of greater internalizing problems in boys but lower levels of internalizing problems in girls. In addition, a positive association was found between appraisals of threat and blame and children's self-report of internalizing problems.

Last, validity was assessed by examining relationships between children's scores on the three CPIC scales and their responses to taped vignettes of marital conflict. Validity would be supported by significant correlations betwen the threat scale and childrens report of negative affect, threat and coping efficacy in response to the vignetees and a significant association between the self-blame scale and children's rating of the degree to which the child is seen as "at fault" for the conflicts.

As predicted, higher scores on the CPIC threat scale were dignificantly related with greter helplessness $\underline{r}(44) = .38$ $\underline{p} = < .05$ greater fear of child involvement in the conflict $\underline{r}(44) = .29$ $\underline{p} < .05$ and with lower confidence that children could help the parents resolve the conflict $\underline{r}(44) = -.30$, $\underline{p} < .05$ or help themselves feel better $\underline{r}(44) = -.30$ $\underline{p} < .05$. Correlations with shame $\underline{r}(44) = .25$, fear of escalation $\underline{r}(44) = .22$, and child fault $\underline{r}(44) = .25$ were marginally significant ($\underline{p} < .10$). The CPIC

Self-blame scale correlated significantly with the degree to which the child was perceived at fault for the conflict vignettes $r(44) = .32$ $p < .05$.

APPENDIX J

DEPRESSION ADJECTIVE CHECKLIST

Psychometrics for the DACL (Continued from Method Section)

The DACL checklists are divided into two components, positive indicators of depression and negative indicators of depression. A scale consisting of the differentiating adjectives distinguished depressed from nondepressed patients at the .001 level.

Concurrent validity has been established for the DACL through correlations with the following: another self-report adjective checklist, a state measure of depression, another state self-report measure of depression, subjects' ratings of depressed mood, and trait measures of depression. All correlations were significant at the .01 level.

To determine construct validity, internal consistency reliability of both the depressed mood and elevated mood factors were determined by the Kuder-Richardson formula. The coefficients for Time 1 were .74 for the positive adjectives and .68 for the negative adjectives. At Time 2, the correlations were .82 and .68, respectively. The estimated correlation of the obtained DACL factors with the total score in Time 1 was .86 for the positive adjectives and .82 for the negative adjectives. In Time 2, the correlations were .91 and .82 respectively.

The internal consistency of each of the seven Depression Adjective Check Lists calculated for males and females separately ranges from .79 - .90. Alternate form reliability (derived from intercorrelations of the seven lists) ranges from .83 to .92 for males and .80-.93 for females. Split-half reliabilities range between .82-.93 for normals and .86-.93 for patients. Intercorrelations of the checklists were obtained separately for males and females. The smallest correlation between any two lists for males is .83, and for females is .80, and for the combined group is .85. All correlations were significant beyond the .01 level. Research has also been conducted that demonstrates scores are comparable on the different adjective lists (Lubin, 1981).

APPENDIX K

STATE SCALE OF THE STATE-TRAIT ANXIETY INVENTORY

Psychometrics for the State-Trait Anxiety Inventory (Continued from the Methods Section)

The manual for the STAI reports studies (Lamb, 1969; Auerbach, 1969; as cited in STAI Manual) in which the state scale effectively discriminated (across time) differing anxiety states in studies using a repeated measures design similar to the current study (Spielberger, 1970).

The STAI is comprised of separate self-report scales for measuring two distinct anxiety concepts, state (A-State) anxiety and trait anxiety (A-Trait). The scales consist of 20 statements that ask people to describe how they generally feel (trait scale) and how they feel at a particular moment in time (state scale). State anxiety is conceptualized as a transitory emotional state or condition of the human organism that is characterized by subjective, consciously perceived feelings of tension and apprehension and heightened autonomic nervous system activity. A-states may vary in intensity and fluctuate over time. Trait anxiety is conceptualized as relatively stable individual differences in anxiety proneness, that is, to differences between people in the tendency to respond to situations perceived as threatening with elevations in A-state intensity.

Test-retest reliability for the A-trait scale range from .73 to .86, while those for the A-state scale were relatively low ranging from .16-.54. The low reliability for the state scales was expected because the situations in which the first and second test was given were unique. Given the transitory nature of anxiety states, measures of internal consistency provide a more meaningful index of reliability. These Cronbach alpha reliability coefficients ranged from .83 -.92. Psychometric studies have also found both the A-trait and A-state scales to have a high degree of internal consistency (Spielberger, 1970).

Concurrent validity of the A-trait scale has been established by obtaining correlations with similar measures designed to measure the same construct. Correlations with the IPAT Anxiety scale and the Taylor Manifest Anxiety Scale range from .75-.85. The state scale was validated by giving the state scale under normal conditions and exam conditions. Scores were considerably higher under the exam condition and every single item was higher for females under this condition (all but one discriminated for males). Another study replicated these results, finding that the state scale significantly discriminated between normal, test, and relaxed conditions (Spielberger, 1970).

APPENDIX L

CONFEDERATE QUESTIONNAIRE

CONFEDERATE QUESTIONNAIRE

1. Rate (for the subject you just finished) where your behavior fell on a cold-friendliness dimension on the scale below

COLD NEUTRAL FRIENDLY

1 2 3 4 5 6 7 8 9 10

2. Did you ask me the two questions determined before the experiment ?

A) How long do we have to talk ?

B) We can take anything we want ?

3. How successful were you at keeping from smiling ?

NOT SUCCESSFUL VERY SUCCESSFUL

1 2 3 4 5 6 7 8 9 10

4. (Confederates are instructed to only make 3 of the 7 suggestions for the list). How many suggestions for the list did you offer ?

1 2 3 4 5 6 7

5. Did your remember to respond to one suggestion the subject made with the following- But don't you think there may be other things we would want to have more than that ? (in a neutral/pleasant tone of voice)

YES NO

(A rule was made that the confederate would not object to the participant's first suggestion)

6. Did you remember to respond to another suggestion the subject made with the following- I'm not sure if I would want to bring that (again in a neutral/pleasant tone of voice)

YES NO

(A rule was made that the confederate would not object to two suggestions in a row that the participant made)

7. Were you successful at only initiating one reciprocal question in response to a participant's question concerning yourself ? (simply answered their question)

8. Were you successful at initiating only one conversation yourself?

If not, how many conversations did you initiate?

9) Would you say the participant was "engaged" in doing the experiment, in other words was "trying" to do her best?

not engaged very engaged

1 2 3 4 5 6 7 8 9 10

APPENDIX M

INSTRUCTIONS FOR PARTICIPANT-CONFEDERATE TASK

Instructions for Participants Conversation

(Read to both the confederate and participant while seated in same room)

Thanks to both of you for coming today. The study in which you are about to participate is designed to assess a person's interactional style and how it may affect how smoothly an interaction goes between two people. What I would like the two of you to do for this part of the study is to use five minutes to decide upon a response to the following question: If the two of you were stranded alone on a deserted island with nothing but food, water, and shelter available to you, what might be seven items you would choose to have with you. The participant and confederate will be provided with a piece of blank paper and pen with which to record their joint response, and left for five minutes to complete this project.

APPENDIX N

FEEDBACK RATING FORM

RATING FORM

Please rate the student with whom you just met on the following dimensions. Please fill out the form as honestly and accurately as possible. Please circle anywhere on the line which you feel adequately expresses how you felt about the student you just met. Answer these questions based on how the student appeared to you.

1= Very Strongly Agree; 2= Strongly Agree; 3= Agree 4= Agree Somewhat; 5= Neutral/ No Opinion; 6= Disagree Somewhat; 7= Disagree; 8= Strongly Disagree; 9= Very Strongly Disagree

ITEM 1. I ENJOYED WORKING WITH THIS PERSON

1------2------3------4------5------6------7------8------9

ITEM 2. THIS PERSON WAS HELPFUL IN OUR COMPLETING THE ASSIGNED TASK

1------2------3------4------5------6------7------8------9

ITEM 3. THIS PERSON WAS ABLE TO EXPRESS HERSELF CLEARLY AND SUCCINCTLY

1------2------3------4------5------6------7------8------9

ITEM 4. THIS PERSON WAS INTERESTING TO TALK TO AND CONTRIBUTED ORIGINAL IDEAS WHILE WORKING ON THE TASK

1------2------3------4------5------6------7------8------9

ITEM 5. THIS PERSON'S STYLE OF WORKING COOPERATIVELY WAS HELPFUL

1------2------3------4------5------6------7------8------9

ITEM 6. THIS PERSON HAD A LIKABLE PERSONALITY

1------2------3------4------5------6------7------8------9

ITEM 7. I WOULD CHOOSE TO WORK WITH THIS PERSON IN THE FUTURE ON A SIMILAR TASK

1------2------3------4------5------6------7------8------9

ITEM 8. THIS PERSON SEEMED TO BE SELF-CONFIDENT

1------2------3------4------5------6------7------8-----9

APPENDIX O

NEGATIVE FEEDBACK RATING FORM

FABRICATED NEGATIVE FEEDBACK

Please rate the student with whom you just met on the following dimensions. Please fill out the form as honestly and accurately as possible. Please circle anywhere on the line which you feel adequately expresses how you felt about the student you just met. Answer these questions based on how the student appeared to you.

1= Very Strongly Agree; 2= Strongly Agree; 3= Agree 4= Agree Somewhat; 5= Neutral/ No Opinion; 6= Disagree Somewhat; 7= Disagree; 8= Strongly Disagree; 9= Very Strongly Disagree

ITEM 1. I ENJOYED WORKING WITH THIS PERSON

1------2------3------4------5------6------7------8------9

ITEM 2. THIS PERSON WAS HELPFUL IN OUR COMPLETING THE ASSIGNED TASK

1------2------3------4------5------6------7------8------9

ITEM 3. THIS PERSON WAS ABLE TO EXPRESS HERSELF CLEARLY AND SUCCINCTLY

1------2------3------4------5------6------7------8------9

ITEM 4. THIS PERSON WAS INTERESTING TO TALK TO AND CONTRIBUTED ORIGINAL IDEAS WHILE WORKING ON THE TASK

1------2------3------4------5------6------7------8------9

ITEM 5. THIS PERSON'S STYLE OF WORKING COOPERATIVELY WAS HELPFUL

1------2------3------4------5------6------7------8------9

ITEM 6. THIS PERSON HAD A LIKABLE PERSONALITY

1------2------3------4------5------6------7------8------9

ITEM 7. I WOULD CHOOSE TO WORK WITH THIS PERSON IN THE FUTURE ON A SIMILAR TASK

1------2------3------4------5------6------7------8------9

ITEM 8. THIS PERSON SEEMED TO BE SELF-CONFIDENT

1------2------3------4------5------6------7------8------9

APPENDIX P

SELF-EFFICACY MEASURES

SELF-EFFICACY MEASURES

Directions on the top of the "specific" (first) self-efficacy measure:

Complete the following questions while keeping in mind that you will interact with the SAME PERSON WITH WHOM YOU INTERACTED PREVIOUSLY.

AND

Directions on the top of the "hypothetical" (second) self-efficacy measure:

Complete the following questions while keeping in mind that you will interact with a NEW PERSON WHOM YOU DON'T KNOW.

ITEM 1. I ENJOYED WORKING WITH THIS PERSON

A. Do you think you could improve your score on this item by ONE point?

YES NO

How sure are you that you could improve your score by ONE point?

Not sure Very sure
10 20 30 40 50 60 70 80 90 100

B. Could you improve your score by TWO points?

YES NO

How sure are you that you could improve your score by TWO points

Not sure Very sure
10 20 30 40 50 60 70 80 90 100

C. Could you improve your score by THREE points?

YES NO

How sure are you that you could improve your score by THREE points

Not sure								Very sure	
10	20	30	40	50	60	70	80	90	100

ITEM 2. THIS PERSON WAS HELPFUL IN OUR COMPLETING THE ASSIGNED TASK

A. Could you improve your score on this item by ONE point?

YES NO

How sure are you that you could improve your score by ONE point

Not Sure								Very Sure	
10	20	30	40	50	60	70	80	90	100

B. Could you improve your score by TWO points?

YES NO

How sure are you that you could improve your score by TWO points

Not sure								Very sure	
10	20	30	40	50	60	70	80	90	100

C. Could you improve your score by THREE points?

YES NO

How sure are you that you could improve your score by THREE points

Not sure								Very sure	
10	20	30	40	50	60	70	80	90	100

ITEM 3. THIS PERSON WAS ABLE TO EXPRESS HERSELF/HIMSELF CLEARLY AND SUCCINCTLY

A. Do you think you could improve your score on this item by ONE point?

YES NO

How sure are you that you could improve your score by ONE point?

Not sure Very sure
10 20 30 40 50 60 70 80 90 100

B. Could you improve your score by TWO points?

YES NO

How sure are you that you could improve your score by TWO points?

Not sure Very sure
10 20 30 40 50 60 70 80 90 100

C. Could you improve your score by THREE points?

YES NO

How sure are you that you could improve your score by THREE points?

Not sure Very sure
10 20 30 40 50 60 70 80 90 100

ITEM 4. THIS PERSON CONTRIBUTED ORIGINAL IDEAS WHILE WORKING ON THE TASK

A. Do you think you could improve your score on this item by ONE point?

YES NO

How sure are you that you could improve your score by ONE point?

Not sure Very sure
10 20 30 40 50 60 70 80 90 100

B. Could you improve your score by TWO points?

YES NO

How sure are you that you could improve your score by TWO points?

Not sure								Very sure	
10	20	30	40	50	60	70	80	90	100

C. Could you improve your score by THREE points?

YES NO

How sure are you that you could improve your score by THREE points?

Not sure								Very sure	
10	20	30	40	50	60	70	80	90	100

ITEM 5. THIS PERSON'S STYLE OF WORKING COOPERATIVELY WAS HELPFUL

A. Do you think you could improve your score on this item by ONE point?

YES NO

How sure are you that you could improve your score by ONE point?

Not sure								Very sure	
10	20	30	40	50	60	70	80	90	100

B. Could you improve your score by TWO points?

YES NO

How sure are you that you could improve your score by TWO points

Not sure								Very sure	
10	20	30	40	50	60	70	80	90	100

C. Could you improve your score by THREE points?

YES NO

How sure are you that you could improve your score by THREE points

Not sure								Very sure	
10	20	30	40	50	60	70	80	90	100

ITEM 6. THIS PERSON'S STYLE WAS PLEASANT THROUGHOUT THE INTERACTION

A. Do you think you could improve your score on this item by ONE point?

YES NO

How sure are you that you could improve your score by ONE point?

Not sure								Very sure	
10	20	30	40	50	60	70	80	90	100

B. Could you improve your score by TWO points?

YES NO

How sure are you that you could improve your score by TWO points

Not sure								Very sure	
10	20	30	40	50	60	70	80	90	100

C. Could you improve your score by THREE points?

YES NO

How sure are you that you could improve your score by THREE points

Not sure								Very sure	
10	20	30	40	50	60	70	80	90	100

ITEM 7. I WOULD CHOOSE TO WORK WITH THIS PERSON IN THE FUTURE ON A SIMILAR TASK

A. Do you think you could improve your score on this item by ONE point?

YES NO

How sure are you that you could improve your score by ONE point?

Not sure								Very sure	
10	20	30	40	50	60	70	80	90	100

B. Could you improve your score by TWO points?

YES NO

How sure are you that you could improve your score by TWO points

Not sure								Very sure	
10	20	30	40	50	60	70	80	90	100

C. Could you improve your score by THREE points?

YES NO

How sure are you that you could improve your score by THREE points

Not sure								Very sure	
10	20	30	40	50	60	70	80	90	100

ITEM 8. THIS PERSON SEEMED TO BE SELF-CONFIDENT

A. Do you think you could improve your score on this item by ONE point?

YES NO

How sure are you that you could improve your score by ONE point?

Not sure								Very sure	
10	20	30	40	50	60	70	80	90	100

B. Could you improve your score by TWO points?

YES NO

How sure are you that you could improve your score by TWO points

Not sure Very sure
10 20 30 40 50 60 70 80 90 100

C. Could you improve your score by THREE points?

YES NO

How sure are you that you could improve your score by THREE points

Not sure Very sure
10 20 30 40 50 60 70 80 90 100

Psychometrics for the Self-Efficacy Instrument

(Continued from Method Section)

Bandura et al. (1977) provides evidence about the first application of this assessment technique in their own research. Their data show that all three dimensions of self-efficacy (magnitude, strength, and generality) were sensitive to a modeling treatment procedure with phobic subjects. The percentage of accurate predictions of later behavioral performances varied between 82% and 89% agreement depending on the type of intervention conducted. During posttreatment assessment, if only the predictions of behavior not performed before the intervention was considered, then the percentage of

agreement was 79%. A prediction that those who performed maximally in treatment would also perform maximally in posttreatment performance was wrong 28% of the time when the "threat" used in the posttreatment condition was very similar to the "threat" used in the treatment condition (for ex., snakes are used in both conditions). If the "threat" used was very dissimilar (a dog was used in one conditions and a snake was used in the other condition), 52% of the predictions made were wrong. The prediction that persons expressing maximal self-efficacy expectations would perform maximally was wrong 21% using similar "threats" and only 24% of the time with dissimilar "threats". Williams and Rappoport (1983) report that female agoraphobics treated with cognitive techniques generally showed that the higher a subject's self-efficacy, the higher the level of performance on a subsequent behavioral test (r's ranged from .92 -.63). In addition, these two investigators showed that the lower a subject's self-efficacy score, the more anxiety the subject anticipated experiencing (r=.92).

APPENDIX Q

DEBRIEFING FORM

Debriefing Form

(To be read by the subject in the presence of the experimenter)

1. Brief Overview of the Study

This study includes adults who grew up with mothers that had a chronic illness (such as arthritis and diabetes), adults who grew up with a mother who was often depressed and adults whose mothers were neither depressed nor had a chronic medical illness. It investigates one's confidence in coping in a stressful situation. It also explores one's self-esteem, and tendency to have feelings of sadness or anxiety during a stressful experience.

2. Clear Explanation of the Negative Peer Interaction Procedure

The purpose of giving participant's negative feedback concerning their interaction with the other person was to see how people would react to this feedback. The student with whom you interacted was actually working with the investigator. The negative feedback report was actually prepared prior to the beginning of the study and was given to all participants. This feedback in no way reflected what the confederate or anyone else thought about you as a person.

3. Ensure that the Participant has Understood these Conditions

Is there anything that you feel confused about or do not understand? Do you have any questions about the procedure or study?

4. Information for 221 experiment form

This project is considered part of the area of psychology labeled Clinical Psychology because it is concerned with preventing depressive disorders. The independent variable is the group in which you are included i.e. as having grown up with a mother who was depressed, a mother who was not depressed or a mother who

had a chronic medical illness. The dependent variables are the self-concept, anxiety, depression, and self-efficacy measures you completed. I will be looking for differences in the scores on the dependent variables between the three groups (the independent variables). In other words, I will examine whether there are differences in self-concept (a dependent variable) between the group of adult-children of depressed mothers, the group of adult-children of non-depressed mothers and the group of adult-children of medically ill mothers (independent variables).

Thank You for participating in our study. If you have any questions concerning the results of this study, please contact Dr. Rosemery Nelson-Gray of the Psychology department - UNC-G.

APPENDIX R

PARTICIPANT PLEDGE

Participant Pledge

I_____, having participated in the study on personality styles, do hereby agree not to discuss the procedures utilized in this study with any classmate of potential participant in this study.

_____ _____

Day Month Year Signature of Participant

APPENDIX S

PARTICIPANT COMMENT FORM

Final Participant Comments

1. What are your general impressions of the study? How do you feel about the use of deception?

2. Were you told anything about this study before you participated? Were you aware beforehand that the feedback wasn't actually completed by the other student and that it didn't have anything to do with what she/he actually thought of you?

APPENDIX T

VELTEN MOOD INDUCTION

Velten Elation Statements

Card 1 - Today is neither better nor worse than any other day.
Card 2- I do feel pretty good today, though.
Card 3- I feel light-hearted.
Card 4- This might turn out to have been one of my good days.
Card 5- If your attitude is good, then things are good, and my attitude is good.
Card 6- I've certainly got energy and self-confidence to spare.
Card 7- I feel cheerful and lively.
Card 8- On the whole, I have very little difficulty in thinking clearly.
Card 9- My parents are pretty proud of me most of the time.
Card 10- I'm glad I'm in college--it's the key to success nowadays.
Card 11- For the rest of the day, I bet things will go really well.
Card 12- I'm pleased that most people are so friendly to me.
Card 13- My judgement about most things is good.
Card 14- It's encouraging that as I get farther into my major, it's going to take less study to get good grades.
Card 15- I'm full of energy and ambition--I feel like I could go a long time without sleep.
Card 16- This is one of those days when I can grind out school-work with practically no effort at all.
Card 17- My judgement is keen and precise today. Just let someone try to put something over on me.
Card 18- When I want to, I can make friends extremely easily.
Card 19- If I set my mind to it, I can make things turn out fine.
Card 20- There should be an oppurtunity for a lot of good times coming along.
Card 21- I feel enthusiastic and confident now.
Card 22- My favorite song keeps going through my head.
Card 23- Some of my friends are so lively and optimistic.
Card 24- I feel talkative--I feel like talking to almost anybody.
Card 25- I'm full of energy, and am really getting to like these things I do on campus.

APPENDIX U

FLOWCHART OF EXPERIMENTAL PROCEDURE

EXPERIMENTAL PROCEDURE

First, participants complete the initial questionnaires and return these to the mailroom. If selected, participants return for the experimental session.

Experimental Session

Complete baseline DACL and STAI ----> Interact w/ confederate ----> Receive negative feedback ----> Complete second DACL and STAI -----> Told will have to interact a second time -----> Complete both Specific and Hypothetical Self-efficacy Measures----> Complete third DACL and STAI ----> participants are debriefed and complete Participant Pledge, and Participant Comment Form, ----> Diagnostic Interview -----> Complete fourth and final DACL ---> participate in Velton Mood Induction if needed.

APPENDIX V

CONFEDERATE AND DEPARTMENT AS POTENTIAL COVARIATES

Confederate and Department as Potential Covariates

Preliminary analyses were conducted to determine if particular confederates had a significant effect on the measures (depression, anxiety, and self-efficacy) relevant to the interpersonal interaction, or if the department the participant came from had a significant effect on any of the outcome variables (the self-perception, marital turmoil, and parenting variables in addition to the above-mentioned variables).

One-way analyses of covariance were conducted with group always serving as the between variable, and department and confederate serving as covariates when the depression, anxiety, and self-efficacy measures were the dependent variables. When the self-perception, marital turmoil and parenting variables were the dependent variables, department only was used as a covariate. Confederate was not used as a covariate for these latter dependent variables because responses to these dependent variables were thought to be independent from the experimental manipulation.

Despite a few significant results, these analyses suggested that neither confederate nor department affected the outcome variables in any consistent manner (See Tables

31 and 32 for a summary of the Ancovas). In other words, there was no evidence to suggest that the participants coming from each of the two departments were substantially different from the other, or that the particular confederate present had any meaningful effect on the outcome variables of concern. As a consequence, a decision was made not to incorporate either of these variables as covariates in subsequent analyses.

Age of Participant and Number of Times the Participant's Mother has been Married as Potential Covariates

Because the number of times the mother was married and the ages of the participants differed significantly among the groups, all of the outcome variables (depression, anxiety, self-efficacy, self-perceptions, perceptions of marital turmoil, and perceptions of parenting behavior) were run with age of participant, and times the mother was married as covariates. Group was the "between" variable.

On the one hand, analyses revealed that the number of times the mother was married was not a significant covariate with any of the criterion variables (Table 33).

On the other hand, differences in the age of the

On the other hand, differences in the age of the participants appears to influence the groups' perceptions of the amount of irritability, hostility, and criticism they received from their mother, and their perceptions of maternal psychological control. Differences in age of the participants also influenced the change in depression from Time 1 (baseline) to Time 2 (receiving negative feedback) (Table 33). Because age significantly influenced these variables in the univariate analyses, age was also used as a covariate in the corresponding multivariate analyses.

Table 31

ANCOVA Values for Confederate and Department as Covariates with Depression, Anxiety and Self-Efficacy as Dependent Variables

	Confederate		Department	
	F Value	P Value	F Value	P Value
DACL at Time 1	.08	.7749	.02	.8969
DACL at Time 2	.01	.9436	1.11	.2964
DACL at Time 3	.20	.6534	.14	.7090
STAI at Time 1	.04	.8394	1.08	.3028
STAI at Time 2	.03	.8745	.01	.9131
STAI at Time 3	.23	.6316	.71	.4033
Self-Efficacy Specific Magnitude	.61	.4359	.01	.9107
Self-Efficacy Specific Strength	4.08	.0476	1.56	.2156
Self-Efficacy Hypothetical Magnitude	.21	.6482	.03	.8554
Self-Efficacy Hypothetical Strength	.95	.3336	.07	.7921

ANCOVA Values for Department As Covariate

with Other Dependent Variables

	F Value	P Value
Self-Perception Job Competence	.54	.4670
Self-Perception Scholastic Competence	1.10	.2982
Self-Perception Social Acceptance	.14	.7060
Self-Perception Appearance	.47	.4969
Self-Perception Parent Relations	.16	.6897
Self-Perception Close Friendship	2.33	.1325
Self-Perception Intellectual Ability	1.85	.1792
Self-Perception Morality	.04	.8363
Self-Perception Romantic Relations	.09	.7635
Self-Perception Humor	3.09	.0841
Self-Perception Creativity	.93	.3388
Self-Perception Athletic Competence	.10	.7541
Global Self-Worth	.22	.6371

	F Value	P Value
Acceptance-Rejection of the CRPBI (Parent Behavior)	.35	.5589
Psychological Control (CRPBI)	9.49	.0030
Firm (Behavioral) Control (CRPBI)	1.79	.1854
Hostility Item	.86	.3579
Irritability Item	.40	.5301
Criticism Item	.71	.4035
Conflict Properties (CPIC) (marital turmoil)	.09	.7678
Threat (CPIC)	.06	.8147
Self-Blame (CPIC)	.00	.9453

Table 33

ANCOVA Values for Age of Participant, and Times the Participant's Mother was Married As Covariates with other Dependent Variables

	Age		Times Mom Married	
	F Value	P Value	F Value	P Value
DACL Time 2-1 (Depression)	6.37	.0142	1.13	.2928
DACL Time 3-2	1.04	.3128	.48	.4929
STAI Time 2-1 (Anxiety)	2.05	.1573	.86	.3584
STAI Time 3-2	.26	.6147	.76	.3860
Self-Efficacy Specific Magnitude	1.65	.2036	.01	.9317
Self-Efficacy Specific Strength	.56	.4580	.02	.8910
Self-Efficacy Hypothetical Magnitude	.97	.3276	.00	.9574
Self-Efficacy Hypothetical Strength	.30	.5889	.48	.4891
Self-Perception Job Competence	.07	.7909	.104	.3117
Self-Perception Scholastic Competence	.12	.7292	.28	.5971
Self-Perception Social Acceptance	.49	.4859	.09	.7701

	Age		Times Mom Married	
	F Value	P Value	F Value	P Value
Self-Perception Appearance	.43	.5169	3.14	.0818
Self-Perception Parent Relations	.14	.7104	.10	.7507
Self-Perception Close Friendship	.11	.7419	1.67	.2012
Self-Perception Intellectual Ability	.09	.7711	.15	.7034
Self-Perception Morality	1.34	.2520	.38	.5415
Self-Perception Romantic Relations	.35	.5562	1.60	.2112
Self-Perception Humor	.07	.7993	.04	.8332
Self-Perception Creativity	1.12	.2944	.18	.6769
Athletic Competence	.90	.3466	.07	.7977
Global Self-Worth	.36	.5509	.01	.9389
Acceptance -Rejection (CRPBI)	1.93	.1700	.00	.9529
Psychological Control (CRPBI)	7.14	.0097	.14	.7084
Firm (Behavioral) Control (CRPBI)	.09	.7665	.27	.6047

	Age		Times Mom Married	
	F Value	P Value	F Value	P Value
Hostility Item	8.98	.0040	.20	.6563
Irritability Item	7.16	.0097	.23	.6337
Criticism Item	8.09	.0060	.31	.5818
Conflict Properties (CPIC) (marital turmoil)	1.50	.2263	2.88	.0964
Threat (CPIC)	.80	.3769	.11	.7395
Self-Blame (CPIC)	.00	.9498	.06	.8107

APPENDIX W

RESULTS FOR HYPOTHESES FIVE, SIX, AND SEVEN

Hypothesis Five

Marital Turmoil

Hypothesis 5 questions whether children of depressed mothers significantly differ from children of nondepressed mothers and children of medically ill mothers in the marital conflict present within their parents' marriage. To answer this question, planned comparisons were made in the context of univariate analyses. The conflict properties (including the frequency, intensity, resolution scales), self-blame (including the content, and self-blame scales), and threat (including the coping efficacy, and personal threat scales) subscales of the CPIC served as the dependent variables. Mother's diagnostic status (group) served as the between variable. Due to data misplaced by an undergraduate lab member, the following analyses include the following sample sizes: Depressed = 21, Controls= 21, Ill= 7, Ill/Dep = 6.

Summary of CPIC Results

For the conflict properties subscale, there was a significant main effect for group (Table 34). Planned comparisons (Table 35) indicated significant differences between the depressed and all three of the other groups. The means were as follows: depressed (M= 42.24), ill only

(M= 34.14, control (M= 32.86), and ill/depressed (M=25.60) (Table 36).

For the threat subscale, there was a significant main effect for group (Table 34). Planned comparisons again indicated significant differences between the depressed and all three of the other groups (Table 35). The means were as follows: depressed (M=23.71), ill only (M=19.71), ill/depressed (M=18.33), and controls (M=17.29) (Table 36).

For the self-blame subscale, there was no significant main effect for group (Table 34), and planned comparisons indicated no significant differences between any of the pairwise comparisons (Table 35). The means were as follows: depressed (M=10.33), control (M=10.00), ill (M=9.57) and the ill/depressed (M=9.33) (Table 36).

The depressed group reported significantly more marital conflict between their parents that was more frequent, intense, and poorly resolved than the other groups. The depressed group also felt significantly more threatened by this conflict. However, it is somewhat surprising that the ill group and in particular, the ill/depressed group often had scores very close to the control group's scores.

Hypothesis Six

Children's Report of Mother's Behavior

Hypothesis 6 questions whether children of depressed mothers significantly differ from children of nondepressed mothers and children of medically ill mothers in their perceptions of their mother's parenting behavior. To answer this question, planned comparisons were made in the context of univariate analyses. The acceptance/rejection, psychological control, and behavioral (firm) control subscales of the CRPBI and the three added parenting items served as the dependent variables. Mother's diagnostic status (group) served as the between variable. Age was used as a covariate.

Summmary of CRPBI Results

On the Acceptance subscale of the CRPBI, there was a significant main effect for group (Table 37), and planned comparisons indicated significant differences between the depressed and both the ill and control groups (Table 38). The means were as follows: depressed (M= 22.73), ill/depressed (M= 25.50), controls (M= 26.81), and the ill group had the highest acceptance scores (M= 27.25) (Table 39). Norms reported by Schludermann & Schludermann (1973) for this scale indicate the mean for females' perceptions of mothers = 25.03 and the standard

deviation =4.93. The depressed group was the only group to report acceptance scores below the mean.

On the psychological control subscale (with age as a covariate), there was a significant main effect for group (Table 37). Plannned comparisons indicated that the depressed group was significantly different from the ill only and control groups, and the ill/depressed group was significantly different from the ill only group (Table 38). The means were as follows: depressed (M = 17.12), ill/depressed (M = 16.30), controls (M = 14.08), and ill only (M = 13.21) (Table 39). Norms for this subscale (Schludermann, & Schludermann, 1973) for females indicate a mean=15.68 and a standard deviation = 5.18. Both the depressed and the ill/depressed groups reports of their mother's psychological control over them were above the norms' mean.

On the behavioral control subscale, there was not a significant main effect for group (Table 37). In addition, planned comparisons indicated that there were no significant differences between pairwise comparisons (Table 38). The means were as follows: depressed (M = 16.73), control (M = 18.35), ill only (M = 18.38), and ill/depressed had the highest scores (M = 18.70) (Table 39). Norms (Schludermann, & Shludermann, 1973) indicate a mean for females =18.00 and the standard deviation = 4.75.

The depressed group's report of their mother's beha/vioral control of them was the only group who was below the norms' mean.

The depressed group consistently reported significantly lower acceptance scores, and higher psychological control from their mothers than the ill only group and the control groups. However, the fact that the ill only group reported the highest acceptance scores and the lowest psychological control scores is somewhat surprising.

One item was asked to indicate hostility. It was phrased "My mother is a person who is often hostile when interacting with me". Participants indicated whether this was a lot like (worth 3 points), sort of like (2 pts), or not like (1 pt.) their mother. The depressed group indicated this was sort of like their mothers Depressed (M = 1.64), whereas the ill, the ill/depressed, and the controls all indicated (on average) that this was not like their mother (M = 1.00) (Table 40). There was a signficant main effect for group (Table 41). Planned comparisons indicated significant differences between the depressed and all of the other groups (Table 42).

One item was asked to indicate irritability, phrased and scored in the same manner as the question above. There was a significant main effect for group (with age

used as a covariate) (Table 41). Again, the depressed group perceived their mother as the most irritable (Table 40). Planned comparisons indicated that the depressed group was significantly higher than all three of the other groups (Table 42). The adjusted means were as follows: depressed (M = 1.7), ill only (M = 1.35), ill/depressed (M = 1.17), and controls (M = 1.08).

One item was asked to indicate criticism, also phrased and scored in the same manner as above. There was a significant main effect for group (Table 41), but planned comparisons indicated no significant differences between groups (Table 42). The adjusted means were as follows: Ill (M = 1.78), Dep (M = 1.72), Control (M = 1.46), and Ill/Depressed (M = 1.41) (Table 40).

In sum, the depressed group consistently perceived their mothers to be significantly more hostile and irritable than the other three groups.

Hypothesis Seven

Marital Conflict, Global Self-Worth and Parenting Behavior as Covariates

Hypothesis 7 questions whether marital conflict, global self-worth, and/or parenting behavior are significant predictors of anxiety, depression, and self-efficacy (i.e. do they provide unique information beyond

what can be known by using diagnostic status as a predictor). Our results indicated that perceived acceptance by their mother and global self-worth were often significant and/or marginally significant covariates when the self-efficacy variables were used as criterion variables. However, these variables did not significantly influence the depression or anxiety variables. Also none of the marital turmoil subscales, nor the psychological and behavioral control subscales of the parenting measure were significant influences on any of the dependent variables.

In sum, it appears that acceptance and global self-worth do provide some unique information above and beyond what can be known by diagnostic status when predicting several of the self-efficacy variables. However, they do not provide enough information to substantially influence the differences between group means.

DISCUSSION OF RESULTS

Perceptions of Marital Conflict and Parenting Behavior

Marital Conflict

When examining risk factors in addition to diagnostic status, the mothers of the depressed group were

reported to have a greater number of marriages, and were perceived to experience significantly more marital conflict that was more frequent, intense, and poorly resolved than parents in the other groups. This finding is consistent with Weissman and Paykel (1974), and Downey and Coyne (1990) who suggest that depressed mothers perceive more conflict in their marriages, and are more likely to have multiple marriages. The daughters in the depressed group perceived themselves to be significantly more threatened by marital conflict than the daughters in the other three groups. This may be related to their being the group most likely to have been exposed to a previous marriage ending (See Table 2 in Appendix A). In sum, daughters of depressed mothers' adjustment may be adversely affected by the upheaval that is inherent in having to adjust to multiple marriages by their parents.

Parenting Behavior

The depressed group also consistently reported significantly lower acceptance scores, and higher psychological control from their mothers than the ill only group and the control group. Furthermore, the depressed group and the ill/depressed group perceived their relationships with their parents more negatively than the ill only group; and the depressed group perceived their

relationship more negatively than the controls on the parental relationship scale of the self-perception measure. This is consistent with literature (Cohler, Grunebaum, Weiss, Hartman, & Gallant, 1977; Cohn & Tronick, 1987; Kuczynski, 1984) documenting depressed parents' poor parenting practices. It is also interesting to note that on the psychological control subscale, the ill/depressed group perceived their mothers to be significantly more controlling than the ill only group.

The depressed group consistently perceived their mothers to be more hostile and irritable than the other groups. This is consistent with the literature reviewed by Gelfand and Teti (1990) and Kuczynski (1984). It is also consistent with the findings of Hamilton, Jones, and Hammen (1993) that unipolar mothers are more likely to exhibit a negative affective style than physically ill, or normal women. Inconsistent with these results (and previous literature) is that the depressed group did not perceive their mothers to be significantly more critical than the other groups.

Marital Conflict, Global Self-Worth, and/or Parenting Behavior as Unique Predictors (Beyond Diagnostic Status) of Anxiety, Depression and Self-Efficacy

Finally, results indicated that perceived acceptance by their mother (one of the three parenting behavior subscales) and global self-worth were often significant covariates when the self-efficacy variables were used as criterion variables. However, using these variables as covariates did not change the self-efficacy means enough to influence differences between groups. Furthermore, neither of these variables significantly influenced the one self-efficacy variable (the magnitude variable of the hypothetical measure) that did demonstrate significant differences among the groups.

When interpreting these results, one should consider that perceptions of parental marital conflict, parenting behavior, and global self-worth are known to be associated (e.g., correlated) with group status; thus, using these variables as covariates after accounting for the effects of group status is a stringent test of their importance. It is likely that if these variables were examined alone (without group status), all of them would be more substantive predictors of the depression, anxiety, and self-efficacy variables.

The fact that global self-worth and maternal acceptance did differentiate between groups beyond what is known by diagnostic status is consistent with previous literature. Both Zimrin (1986) and Werner (1986) have found self-esteem to be an "important individual variable for identifying resilient children and adolescents with respect to some types of stress". Neighbors, Forehand, and McVicar (1993) also found high self-esteem and a good relationship with their mother to be defining characteristics of "resillient" children in their study, although they found self-esteem to be the more effective of the two variables in differentiating between resillient and nonresillient groups.

Additional Explanations for Findings Including Parenting Variables (as Unique Predictors of the Criterion Variables)

Only one of the three parenting subscales (Acceptance) was found to be a significant covariate with any of the criterion variables. Likewise, Downey and Coyne (1990) emphasize rejecting parenting behaviors (such as hostility, irritability, and criticism) more than behaviors such as psychological control or behavioral control (the other two parenting subscales). Thus, it may be that the acceptance subscale is a particularly

meaningful subscale for children of depressed mothers. Moreover, it is possible that, for college students, general feelings of acceptance and rejection are more salient dimensions of parenting behavior than permissive parenting or inappropriate parenting. In addition, college-age students may be less likely than younger children to have parents attempting to control their behavior. As a consequence, differences between groups may have been even greater if a younger sample were used; thus, the contribution of the parenting variables (in addition to diagnostic status) to the outcome variables may have been greater.

Explanations for Findings Including Marital Conflict Variables (as Unique Predictors of the Criterion Variables)

None of the marital conflict variables (Conflict Properties, Threat, and Self-Blame) were found to be unique predictors (beyond diagnostic status) of any of the criterion variables. Albeit, the literature on whether marital conflict leads to children's internalizing symptoms is mixed (Grych & Fincham, 1990). Some reseachers have suggested that the relationship of marital turmoil to internalizing variables is spurious (Downey and Coyne, 1990). In other words, marital turmoil directly

leads to externalizing behavior problems, however marital turmoil also increases maternal depression. Then it is argued that it is maternal depression that leads to children's internalizing problems (not marital turmoil). Within this model, an explanation for the current findings is that self-efficacy, depression, and anxiety are all internalizing behaviors; thus, it would be expected that marital turmoil would be found to be associated with clinical levels of maternal depression, but would not be found to significantly predict self-efficacy, anxiety and depression (beyond what can be predicted by diagnostic status i.e., maternal depression) since all of the criterion variables in the current study are internalizing behaviors.

Another possible explanation is that older adolescents may be less threatened, and/or have less self-blame than younger children because of their more advanced cognitive abilities, and because interparental conflict may not be as threatening for them now that they are older and more concerned with peer relationships, girlfriends, and their future (Grych & Fincham, 1990). Although, the depressed group was more threatened than the other groups, their scores were still less than one standard deviation above the mean in the norms reported by Grych, Seid, and Fincham (1992). The developmental level of the sample may

have attenuated the relationship between marital conflict and the outcome variables.

Supporting the idea of a "developmental model" is the fact that there were smaller differences between groups for the threat and self-blame subscales than for the conflict properties subscale. Grych, Seid, and Fincham (1990) have found that the Conflict Properties subscale did not significantly predict internalizing problems once Threat and Self-blame were controlled, but the Threat and Self-blame scales each significantly predicted child internalizing problems after accounting for the effects of the other two scales. They suggest that the relation between marital conflict and internalizing problems depends on the degree to which children feel threatened and blame themselves when conflict occurs, rather than their mere exposure to conflict.

Grych and Fincham (1990) also emphasize that the child's ability to make accurate causal attributions for conflict, and the child's previous experience with marital conflict mediates the relationship between marital conflict and adjustment. For example, older children (such as in the present sample) may be more able to understand that they are not the cause of their argument, and/or accurately assess whether there is likely to be

serious consequences for the future. As a consequence, there may be less impact on their behavioral adjustment.

Table 34

ANOVA Means and Standard Errors for Marital Turmoil (CPIC) Subscales (Conflict Properties, Threat, Self-Blame) as Dependent Variables

	N	Mean	Std Error	P Value
Dependent Variable: Conflict Properties				
Depressed	21	42.2380952	2.5505253	.0001
Control	21	32.8571429	2.5505253	.0001
Ill Only	7	34.1428571	4.4176393	.0001
Ill/ Depressed	5	25.6000000	5.2270214	.0001
Dependent Variable: Threat				
Depressed	21	23.7142857	1.1863420	.0001
Control	21	17.2857143	1.1863420	.0001
Ill Only	7	19.7142857	2.0548047	.0001
Ill/ Depressed	6	18.3333333	2.2194427	.0001

	N	Mean	Std Error	P Value
Dependent Variable: Self-Blame				
Depressed	21	10.3333333	.4574404	.0001
Control	20	10.0000000	.4687369	.0001
Ill Only	7	9.5714286	.7923100	.0001
Ill/ Depressed	6	9.3333333	.8557926	.0001

Table 35

ANOVAS for Each CPIC Subscale as a Dependent Variable

	F Value	P Value
Conflict Properties	3.88	.0143
Threat	5.19	.0033
Self-Blame	.48	.6998

Table 36

Planned Contrasts for Anovas with Marital Turmoil (CPIC) Subscales as the Dependent Variables

Contrast	Conflict Properties		Threat		Self-Blame	
	t	*P* Value	*t*	*P* Value	*t*	*P* Value
Depressed vs. III Only	1.59	.0594	1.69	.0490	.83	.2045
Depressed vs. Controls	2.60	.0061	3.83	.0002	.51	.3065
Ill Only vs. Control	.25	.4010	1.02	.1555	-.47	.6782
Ill/Depressed vs. Ill	-1.25	.8911	-.46	.6499	-.20	.5805
Ill/Depresses vs. Control	-1.25	.8911	.42	.3395	-.68	.7512
Ill/Depressed vs. Depressed	-2.86	.0006[a]	-2.14	.0373[a]	-1.03	.3077[a]

Note. *p* values are for one-tailed *t* tests unless designated.

[a]indicates a *p* value for a two-tailed *t* test.

Table 37

ANOVA and ANCOVA Means and Standard Errors for Parenting Behavior (CRPBI-30) Subscales as Dependent Variables

	N	Mean	Std Error	P Value
Dependent Variable: Acceptance/Rejection				
Depressed	26	22.7307692	1.0842037	.0001
Control	26	26.8076923	1.0842037	.0001
Ill Only	8	27.2500000	1.9545759	.0001
Ill/ Depressed	10	25.5000000	1.7482259	.0001
Dependent Variable: Psychological Control (With Age as a Covariate)				
Depressed	25	17.1280436	1.0064379	.0001
Control	24	14.0842388	.9642909	.0001
Ill Only	8	13.2189354	1.6898995	.0001
Ill/ Depressed	10	16.3025697	1.5543608	.0001
Dependent Variable: Behavioral Control				
Depressed	26	16.7307692	1.1734671	.0001
Control	26	18.3461538	1.1734671	.0001
Ill Only	8	18.3750000	2.1154979	.0001
Ill/ Depressed	10	18.7000000	1.8921589	.0001

Table 38

One-Way ANOVAS and ANCOVAS for Each CRPBI-30 Subscale as a Dependent Variable

	F Value	P Value
Acceptance/ Rejection	2.84	.0447
Behavioral Control	.45	.7188
Psychological Control (with Age as Covariate)	4.37	.00018

Table 39

Planned Contrasts for Anovas and Ancovas with Parenting Behavior (CRPBI) Subscales as the Dependent Variables

	(Age as Covariate)					
	Acceptance Rejection		Psychological Control		Behavioral Control	
Contrast	t	P Value	t	P Value	t	P Value
Depressed vs. Ill Only	-2.02	.0236	1.90	.0312	-.68	.2496
Depressed vs. Controls	-2.66	.0049	2.10	.0198	-.97	.1670
Ill Only vs. Control	0.20	.5719	-.46	.6758	.01	.5041
Ill/Depressed vs. Ill	- .67	.2535	1.35	.0913	.11	.5454
Ill/Depressed vs. Control	- .64	.2636	1.20	.1171	.16	.5629
Ill/Depressed vs. Depressed	1.35	.1829[a]	-.43	.6666[a]	.88	.3797[a]

Note. p values are for one-tailed t tests unless designated.

[a]indicates a p value for a two-tailed t test.

Table 40

ANCOVA Means and Standard Errors for Age as Covariate and Parenting Behavior Items as the Dependent Variables

	N	Mean	Std Error	P Value
Dependent Variable: Hostility Item				
Depressed	25	1.59208400	.09875426	.0001
Control	23	1.06446591	.97408510	.0001
Ill Only	8	1.09197954	.16705030	.0001
Ill/Depressed	8	.87241847	.16984886	.0001
Dependent Variable: Irritability Item				
Depressed	25	1.71177188	.11545566	.0001
Control	20	1.08313620	.12267263	.0001
Ill Only	8	1.35267088	.19626460	.0001
Ill/Depressed	10	1.17216120	.18167693	.0001
Dependent Variable: Criticism Item				
Depressed	25	1.72500444	.16594176	.0001
Control	25	1.46015039	.15573200	.0001
Ill Only	8	1.78023363	.27752412	.0001
Ill/Depressed	10	1.41291601	.25568794	.0001

Note. It is important to note on the hostility, criticism, and irritability variables that a score = 1 means that the participants indicated this was "not like" their mother, a score = 2 means this was "somewhat like" their mother, and a score = 3 means this was "a lot like" their mother.

Table 41

ANCOVAS for Age as Covariate with the added Parenting Items as Dependent Variables

	F Value	P Value
Hostility	7.98	.0001
Irritability	6.28	.0001
Criticism	2.57	.0356

Table 42

Planned Contrasts for ANCOVAS with Age as Covariate and with Parenting Items (CRPBI) as the Dependent Variables

Contrast	Hostility		Irritability		Criticism	
	t	*P* Value	*t*	*P* Value	*t*	*P* Value
Depressed vs. Ill Only	2.46	.0085	1.51	.0689	- .16	.4355
Depressed vs. Controls	3.66	.0003	3.62	.0003	1.12	.1338
Ill Only vs. Control	.15	.4195	1.20	.1178	1.04	.8480
Ill/Depressed vs. Ill	- .93	.8208	- .68	.7504	- .98	.1663
Ill/Depressed vs. Control	- .97	.8323	.40	.3460	- .16	.4382
Ill/Depressed vs. Depressed	-3.59	.0007[a]	-2.43	.0180[a]	-1.00	.3235[a]

Note. *p* values are for one-tailed *t* tests unless designated.

[a]indicates a *p* value for a two-tailed *t* test.